A Clinical Lecture ON COLIC.

DELIVERED AT THE LONDON SCHOOL OF CLINICAL MEDICINE,

BY

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THE word "colic" was originally meant to be descriptive of a sudden, acute, paroxysmal pain produced by some abnormal condition of the colon. A wider significance is now attached to the term, which has come popularly to connote pain of this description occurring anywhere throughout the body, when it is dependent upon either irregular active contraction or excessive passive dilatation of involuntary muscular fibre.

The varieties of it with which we are most familiar, and with which only we are concerned to-day, are those met with in the abdomen, where it is symptomatic of a large variety of disorders. The most homely example of colic is that due to muscular spasm of the intestinal walls resulting from the presence of irritating and unsuitable food. The pain arising from this cause comes on suddenly, but is often preceded by eructations, nausea, borborygmi, and a sense of abdominal discomfort. It is mostly referred to the neighbourhood of the umbilicus, whence it may radiate in various directions. It is griping in character, and often so acute as to cause the sufferer to cry out, and to toss about in search of relief first in one and then in another position. It is controlled by pressure, and this is a point of primary diagnostic importance as differentiating it from the pain of peritonitis. It usually consists of a series of paroxysms which vary in duration and severity, and are frequently relieved by the escape of flatus or by an action of the bowels. The abdomen is nearly always distended, and in a thin person it is sometimes possible to note the passage of the peristaltic wave along the course of the intestine coincident with the paroxysm of pain. The griping discomfort is similar to that produced by a dose of aperient medicine, and is due to the forcible contraction of the muscular coat of the bowel in its effort to dislodge an obstruction. The cause may be a simple condition of constipation, but more frequently there is in association the presence of indigestible and irritating food. When the pain is due to faecal impaction, a history of previous constipation will be forthcoming, with scanty and infrequent stools that are always dry, hard, and scybalous. If the abdominal walls are thin, the colon may be felt to be loaded with faecal masses. An anal examination will often reveal their presence in the rectum. It is very easy to mistake a simple intestinal colic for more serious disease, and the greatest danger arises from the possibility of an acute intestinal obstruction being responsible for the colicky pains. Under such circumstances purgatives are, as we know, the worst possible drugs to use, and yet, how often, under the belief that some unwholesome article of diet is responsible for the pain, are purgatives administered not once only, but repeatedly! The pain of perforation is of sudden onset like ordinary colic, but it is accompanied by a quickened pulse and is speedily followed by evidence of collapse.

Another striking variety of colic is that produced by gall stones impacted in the cystic or in the common duct. The patient is very often—though by no means always—a fat plethoric woman past middle life. The pain is sudden in onset, severe in character, and is referred to the right hypochondrium, whence it is reflected through to the back and up to the right shoulder; also sometimes obliquely towards the umbilicus, but rarely below that level. It may be so agonizing as to double the patient up or cause her to writhe on the floor or bed. It is often accompanied by rigors and vomiting, and induces rapidly a condition of collapse, with profuse clammy perspiration and a soft, small, rapid pulse. It may cease as suddenly as it began, or it may be continued with intermittent periods of comparative quiescence over several hours or even some days. If the obstruction has occurred in the common bile duct and is complete, bile pigment speedily appears in the urine and the patient becomes jaundiced. When the stone is impacted in the cystic duct and does not, therefore, prevent the flow of bile through the hepatic and common ducts, there will be no jaundice. Cases of a milder degree of severity are met with in which it seems likely that the cause is not a calculus but an inspissated condition of the bile, which becomes so sticky and tenacious as to be unable to flow freely through the passages. When a stone becomes arrested in the ampulla of Vater, it may happen that the bile is forced up the duct of Wirsung—which also opens into this ampulla—into the pancreas, where it may set up an acute or even a haemorrhagic pancreatitis. This sequence of events is also possible without the presence of a stone to account for it, and here again it must be assumed that a viscid state of the bile is sufficient to cause the obstruction. The following cases are illustrative of such an occurrence:

A woman of stout build, and 56 years of age, was suffering from jaundice, which had lasted for two months. She had no acute pain and no vomiting, but she complained of constant nausea, with much tenderness and weight over the upper part of the abdomen. The urine was loaded with bile, contained indican, a trace of albumen, and copious urates. The motions were pale, but not entirely without bile. The liver was tender and smoothly enlarged to three fingerbreadths below the costal area. There was no special tenderness over the gall bladder region. The patient's age, the duration of her jaundice, and the fact of her having lost two stones in weight, all pointed to the likelihood of a malignant growth as the explanation of her symptoms; but against such an explanation were the facts that the hepatic enlargement was smooth, and that there was no evidence in any other organ of a primary lesion. Under careful dietary, rest in bed, and treatment by mild mercurials and ammonium chloride with taraxacum, the jaundice gradually disappeared, the liver diminished in size, and the patient made an uneventful recovery.

A man of 48 years of age, of gouty antecedents, and engaged in arduous sedentary work, had suffered repeatedly from minor abdominal attacks characterized by shivering, vomiting, paroxysmal pains referred to the upper part of the belly, highly coloured and concentrated urine containing bile and urates in excess, and on two occasions a temporary condition of icterus. After a period of unusually strenuous work he was suddenly attacked with pain such as he had experienced before, but of much greater severity, and followed within two days by jaundice, which deepened day by day until at the end of the week it was of the most acute description and accompanied by clay-coloured stools, urine loaded with bile, and tenderness to touch over the hypogastric and epigastric regions. The pain never achieved the intense degree that usually belongs to the passage of a calculus, and there had been no vomiting, but otherwise the symptoms pointed to the impaction of a stone, probably in the ampulla of Vater. His abdomen was opened and the gall bladder and bile ducts were found free from stones, but the pancreas was swollen and inflamed, though fortunately not haemorrhagic. The jaundice, in this case, was probably due to pressure of the enlarged head of the pancreas on the common bile duct, with which it is in close contact. The gall bladder was drained and the patient made a slow but satisfactory recovery. Some years later he developed a mild but persistent glycosuria, probably the result of secondary fibrotic changes in his pancreas. A point of diagnostic importance in this case was the rapid and extreme emaciation which accompanied the acute stage of the illness. Within a fortnight he lost 2½ st. in weight.

Comparable with biliary colic, and announced by the same sudden series of symptoms—rigors, pain and vomiting—we meet frequently, and most commonly in men, with another variety of colic in connexion with the kidney, the result of spasmodic contraction of the muscular fibres of the ureter when irritated by the passage of a stone or other foreign body. The pain is situated in one loin and flank and radiates downwards to the groin and testicle; sometimes also to the thigh of the corresponding side. It is quite as acute as in biliary cases and doubles the patient up; it may even be so severe as to induce collapse. The testicle of the side affected is retracted and often tender to touch. If the stone falls back into the pelvis of the kidney, or is passed on to the bladder, the pain ceases as suddenly as it began. While it lasts, micturition is frequent, the urine is scanty and often voided by a few drops at a time, and it may contain both blood and albumen. If a cystoscopic examination be made, the orifice of the ureter on the affected side may be observed to be swollen and irritable, the urine flowing slowly from it and being turbid or blood-stained. On manipulation the affected kidney is frequently tender to touch and may be enlarged. Renal colic is not always due to the presence of a calculus; it may also be produced by an excess of uric acid, blood clot, mucus, or fragments of new growth detached from the pelvis of the kidney. Pain not unlike that of calculus may be produced

by pyelitis, in which case the urine will generally be found to contain either pus or blood.

Another variety of colic is that dependent upon lead poisoning. The patient whose circumstances of life have exposed him to the influence of lead, after suffering during several weeks from headache, lassitude, nausea, and increasing pallor, becomes the victim of severe colicky pains of a twisting, knotty character, centring round the umbilicus. The bowels are always obstinately confined, the muscles of the abdominal wall are firm and contracted, and the local misery is relieved by steady pressure. The presence of a blue line on the gums, and the discovery of the metal in the urine, added on to a history of exposure to lead, and often confirmed by the occurrence of wrist-drop from paralysis of the extensors of the forearms, removes any doubts as to diagnosis when such arise.

Besides these classical examples of paroxysmal pain due to irregular contraction of non-muscular fibres which are met with in the abdomen, there are other important though less common varieties of colic encountered in that region to some of which I desire now to draw your attention.

It is almost certain that much of the pain associated with neurotic dyspepsia is produced by spasm of the muscular walls of the stomach. In a typical case of this description the patient suffers from flatulence, heartburn, and pain some hours after a meal. The discomfort is rapidly relieved by an alkali. On examination the stomach is found dilated; there is temporary tenderness on deep pressure over the pylorus; and the condition is often mistaken for duodenal ulcer. Here is an example:

An active man of 48 years of age had suffered over many years from recurring attacks of digestive disturbance, the leading manifestations being heartburn, pain four or more hours after food relieved by another meal, epigastric fullness, constant eructations, constipation, disturbed sleep after 3 a.m., mental depression, and emaciation. His illnesses lasted over several weeks, always came as the result of overwork, and he invariably got well after rest, simple food, and antacid tonic remedies. There never had been haematemesis or melaena. Each attack was ushered in by colic in the upper abdomen, and the physical signs comprised a coated tongue, a moderately dilated stomach, tenderness on deep pressure over the pyloric region, a soft, rapid, and irritable pulse, and very active reflexes. Between times his health was quite satisfactory, except for occasional subjective discomforts which were of neurasthenic type. He saw many doctors, underwent much treatment, and had been strongly urged to have a gastro-enterostomy done as the only hope for relief. Time, patience, easier conditions of life, and careful management made this gentleman quite well, and for many years now he has not known that he is possessed of a stomach.

Sudden colic of an intense type is produced by the impaction in Wirsung's duct of a pancreatic calculus. The pain is centred in the epigastrium and radiates to between the shoulders and down into the deeper parts of the abdomen. It is accompanied by nausea, often by vomiting, and occasionally by syncope. The calculus may be passed into the duodenum and found in the stools. If retained, its presence leads to dilatation of the duct and may be the exciting cause of pancreatic fibrosis or suppuration. Glycosuria is a common sequel and indicanuria is present in many cases. The faeces contain an excess of fatty matter and also sometimes undigested muscular fibres. Jaundice may occur as a secondary complication from induration of the head of the pancreas.

Another form of abdominal colic is associated with spasm of the appendix, causing a partial occlusion of its lumen and leading to violent and irregular action of its muscular coat. When the pain is localized in the right iliac fossa it is not likely to be misinterpreted, but it is often reflected to the epigastric area, and then it is apt to be mistaken for an ordinary gastralgia. It may be unimportant and of short duration if the muscular efforts of the appendix succeed in dislodging the mucus or other obstruction to which it is due, but it may also be the precursor of an acute appendicitis. There may be one attack only, but it is more commonly the case that the first is the forerunner of subsequent seizures. Under these circumstances the risk of inflammatory developments must never be lost sight of. On examination of such a case the wall muscles over the situation of the appendix are abnormally resistant when compared with those over the corresponding situation in the left iliac fossa, and on gentle deep pressure over McBurney's spot tenderness will be complained of. Many attacks may be experienced without the condition going further than that of colic, but there is no security, under such circumstances, against serious developments, and a person with such an appendix can only be rendered safe by having it removed.

Closely allied to this appendicular variety of colic is another with which it may be associated and for which it may be mistaken, namely, that form of it which we find preceding the discharge of mucus in the alvine evacuations. It is of frequent occurrence in children and in adults of the neurasthenic type. In children the attack may be due to indigestible food, but in adults it is most commonly induced by some unusual worry or emotional disturbance. The patient experiences acute griping pains which are either distributed throughout the abdomen, or localized to one portion of it. In many instances careful palpation will enable us to ascertain a greater or less degree of localized hardening merging into neighbouring distension somewhere in the course of the large intestine. When this localization chances to be in the situation of the ileo-caecal valve the resemblance to appendicitis is very great. If the stools be carefully examined they will be found to contain a quantity of tenacious mucus which may be of a slimy and gelatinous appearance or stringy and membranous. The condition is not accompanied by disturbance of temperature, or acceleration of pulse, but constipation is a marked feature of most cases. Treatment on ordinary principles quickly succeeds in relieving the discomforts of the attack, but recurrence is the rule rather than the exception.

Yet another form of colic, in which the pain is referred to the right side of the abdomen, and met with more frequently in women than in men, is that which is associated with a loose right kidney. The colic under these circumstances is dependent upon a kinking of the upper part of the ureter from a temporary dislocation of the kidney or from torsion of the renal vessels. It is often brought about by some unusual and awkward muscular movement, and is especially liable to occur in a person who wears tight and unwisely adjusted corsets. This variety of colic, first described by Dietl, is characterized by severe, sudden pain referred to the kidney region, nausea, vomiting, collapse, and sometimes haematuria. It is liable to become complicated in time with an intermittent hydronephrosis, in which case this sequence of symptoms will be accompanied by a tender swelling occupying the renal region. The diagnosis is made evident when this tumour suddenly disappears with the passage of a large quantity of water. Cases of this description may be of congenital origin. The following is an interesting example:

A young man of 18 had suffered for upwards of six years from recurrent attacks of haematuria, which always came on after undue exertion or exposure to cold. The attacks were associated, in every instance, with rigors, pyrexia, vomiting, and disturbance of digestion. They bore all the outward characteristics of paroxysmal haemoglobinuria, but this diagnosis was negatived by the presence of abundant blood corpuscles in the blood-stained urine. When about 17 years of age he experienced a more than usually acute attack similar to those that had occurred previously, but this time accompanied by a feeling of pain and fullness in the left flank, which was immediately relieved by the passage of a considerable quantity of urine. When seen the day after this attack the kidney was enlarged and tender to touch, but he had no subjective symptoms of discomfort. An *x* ray photograph confirmed the diagnosis of enlargement of his kidney, but negatived the suspicion of a caculus as a possible explanation of the cause. After an interval of a year, another similar attack occurred, and an operation was decided upon. When the kidney was exposed the condition was ascertained to be extremely interesting: "a congenital condition, causing intermittent hydronephrosis, and the congenital cause an aberrant branch of the renal vein. The kidney was sacculated, but not at the moment much distended. The renal pelvis was greatly distended. The ureter was quite normal. The obstructing vein passed across the point of juncture of the ureter and renal pelvis."

Another cause of sudden acute colicky pain in the abdomen—and fortunately a rare one—is occlusion by embolism or thrombosis of the mesenteric vessels. Endocarditis or arterio-sclerosis are the conditions upon which infarction depends, while thrombosis may be sequential to cirrhosis of the liver, syphilis, or pylephlebitis. In acute cases the onset is sudden and is manifested by colic, vomiting, collapse, abdominal distension, and loose, blood-stained stools. Death frequently occurs within two or three days. The diagnosis is always difficult, the condition being frequently mistaken for intestinal obstruction.

There is a variety of paroxysmal abdominal pain which seems to occur for the most part in patients of a gouty

type whose vessels have become atheromatous and who suffer from continuous high arterial pressure with, it may be, occasional anginal attacks. The cases I have seen of this description have all been in persons past middle life and mostly in men. The patient usually comes with a story of previous attacks, which he had been led to believe were due to gout in the stomach, and this suggestion is strengthened by the fact that there is often a record of classical gout in one or other great toe. The pain comes on suddenly in the upper part of the abdomen, and is accompanied by nausea, vertigo, sickness, an icteric tint of the skin, often a smooth enlargement of the liver, and invariably a high-tension pulse. The case has all the appearance clinically of gall-bladder colic, but there is never absolute jaundice, and the sickness is of moderate amount. The patient, instead of being doubled up and restless, is afraid to move lest he increase the pain, which yields rapidly to nitroglycerine and iodides. The attack is always succeeded by a copious evacuation of lithates in the urine, pale stools, and complete anorexia, all of which disappear rapidly under the influence of rest, a restricted diet, and simple alkalis. It seems not unlikely that these symptoms may be produced by arterial spasm, giving rise to a state of abdominal angina similar to the angina pectoris with which we are all familiar. Here is a strikingly illustrative case:

A man of 68 years of age was suddenly seized during the night with acute pain in his abdomen, associated with tightness in his chest and pain radiating down his left arm. For years he had suffered from attacks of angina pectoris of moderate severity, for the relief of which he always carried with him a supply of nitroglycerine tabloids. The chest discomfort on this occasion made him take one tabloid, followed in half an hour by a second. To his surprise, not only was the chest spasm relieved just as it had often before been cured by the same procedure, but the abdominal pain also entirely disappeared. About a year after this attack he experienced another precisely similar and found himself again quickly restored to comfort by nitroglycerine. He is a full-blooded man, who, in his earlier years, suffered repeatedly from articular gout. His vessels are atheromatous, his arterial tension is always plus, he has a systolic aortic murmur with a loudly accentuated second sound, his kidneys have undergone interstitial changes, and he has occasionally a slight glycosuria. The pain in his abdomen is a new experience, and is, he says, a repetition in another place of the attacks he has so frequently suffered from in his chest.

Sir Lauder Brunton has told us of cases in which he believes abdominal pain is due to a spasm of the vessels similar to that met with in ordinary migraine. If migraine can thus express itself in the abdomen, it is not unreasonable to suppose that angina may also declare itself in that situation, and many cases are on record which support such a theory.

Yet another curious form of abdominal colic is illustrated in the following case. I am unable to explain the etiology, but the sequence of events has been repeated on so many occasions in the experience of this lady that its most likely elucidation would again seem to be some form of arterial spasm probably connected in this instance with disturbance of the vasomotor centres.

A lady, 54 years of age, had suffered in earlier life from urticaria of considerable severity, sometimes of prolonged duration. She is neurotic, comes of a family with a long gouty history, and has led a life of unusual activity. Since her menopause, about eight years ago, she has had at least five or six attacks of typical angio-neurotic oedema, the part affected being mostly the face, and to a less extent the hands. The swelling comes suddenly, is accompanied by tingling and a sense of heat, and after a few hours subsides as speedily as it arrived. But the interesting point in connexion with our present inquiry is the fact that each recurrent attack of oedema is accompanied by gastro-intestinal disturbance of quite remarkable severity. She experiences acute colicky pain throughout the abdomen, which ends always in diarrhoea, and is accompanied by distressing feelings of nausea and collapse. The pain on two occasions was so severe as to require morphine hypodermically for its relief. She is most careful in her habits of life, and is unable to refer the gastric disturbance to any indiscretion in her diet. On the other hand, she attributes all her attacks to undue exposure to cold, happening under circumstances when, from one cause or other, she had been run down and poor in health.

The explanation of angio-neurotic oedema is obscure, but a case like this suggests some form of intestinal toxaemia as one of the causes, and the hypothesis is strengthened by the record of attacks, earlier in life, of ordinary urticaria.

In certain cases of diabetes the terminal event is ushered in by abdominal disturbance of which the first manifestation is acute griping pain. The colic is sometimes extremely severe, and seems to radiate from a point of greatest intensity situated deep in the abdomen between the umbilicus and the ensiform cartilage. It is rapidly followed by distension, pyrexia, nausea, and sometimes diarrhoea. The patient is restless and speedily falls into a condition of coma, which ends in death. The sweet smell of the breath may suggest the existence of acidosis, but unless the fact is appreciated that diabetic coma may be ushered in with acute abdominal manifestations, the true explanation of this variety of sudden colicky disturbance may be altogether missed. In every case of acute abdominal pain for which no adequate reason can be found the urine ought to be examined for sugar.

Other conditions which may be responsible for abdominal pain of the colic type and which must be carried in remembrance are: Aneurysm of the abdominal aorta; malignant disease of one of the abdominal organs or of the retro-peritoneal glands; hysteria; and the visceral crises of locomotor ataxia. The concomitant circumstances and symptoms by which the pain is accompanied in each of these varieties of disease will, if carefully considered, serve to direct the diagnosis in the right direction.

There are no doubt many other causes of acute paroxysmal pain in the abdomen, but those which have been cited are sufficient to prove that the subjective symptom of colic is of no inconsiderable importance, and one which serves as an indicator to many and various disorders altogether apart from those of inflammatory trouble, with which we are not now concerned, but of which, as we all know, it is a constant accompaniment.

I have not time to consider this symptom of colic in its relationship to pelvic disorders. In women disorders of the tubes, the ovaries, or the uterus may all give rise to colicky pain, but it is not so fully appreciated that the bladder may also be responsible for this symptom. We are familiar with the pains associated with the presence of a stone or the existence of a urethral caruncle in women; and we know that crises in connexion with the bladder may occur in locomotor ataxia. Also it is common knowledge that colicky pains and urgent micturition may be associated with a highly acid and irritating condition of the urine, or with the occurrence of infection by *B. coli*. But, in addition to these, there is yet another form of discomfort, which may not inaptly be described as bladder colic, encountered both in men and women, which is, though not serious to life, very trying for those who suffer from it. The condition is probably a neurosis, and happens in people of neuropathic tendencies. The patient, either when in a condition of unusual depression of general health or as the result of some form of emotional disturbance, is suddenly seized with pain in the urethra and a commanding desire to pass water. Urination is a matter of some difficulty, particularly the commencement of the act, but, though a sensation of scalding is produced as the water passes through the urethra, the acute suffering is at once relieved. There seems some difficulty in completely emptying the bladder, and the patient requires to return, once or oftener, to void with effort a few remaining drops. After micturition is completed there remains a sense of heat and burning, accompanied sometimes by acute tenderness over the orifice of the urethra. After a short interval—in many instances less than an hour—the pain returns and again produces the same urgency of evacuation. The paroxysmal attack is frequently finally alleviated by the excretion of a large quantity of pale colourless water. The urine presents no abnormality either chemically or microscopically, but the attack is accompanied by much nervous irritability and unrest. A case at present under observation is illustrative:

A lady, very stout, and for many years neurasthenic, has suffered since her menopause from recurrent attacks of this description. Recently the sudden illness of a member of her family caused her intense anxiety, and no sooner was the crisis of her daughter's illness over than she developed the attack from which she is now recovering. Suddenly during the night she was awakened with acute twisting pain in her urethra. On attempting to pass water she found it impossible except under the persuasive influence of a steam hip bath. The amount passed was small, and accompanied by a sensation of scalding, but the flow relieved the acuity of the pain. From 2 o'clock till 8 the attack continued, and she was disturbed to pass water during that period no fewer than nine times, the quantity on each occasion being inconsiderable, but the appearance normal. Gradually the annoyance subsided, and in two days she was restored to her usual comfort. This attack is

typical of many she has had, and was ultimately relieved, as many of its forerunners had been, by hot douches of boracic solution, and a mixture, frequently repeated, of urotropine, henbane, and valerian. In this patient's case the tenderness of the urethra is such a marked feature that in her present attack the local application of a strong solution of cocaine was required for her relief.

ENTEROSPASM AND COLIC FROM THE SURGICAL POINT OF VIEW.

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PAIN, vomiting, and collapse constitute the cardinal symptoms of most acute abdominal crises, and we have to rely upon other symptoms than these to differentiate one case from another.

This may be easy in such conditions as renal colic, appendicitis, twisted ovarian pedicle, and similar well-defined ailments; but it frequently happens that surgical aid is sought in less urgent affections, where the existence of one or more of the three important symptoms referred to produces a mimicry of serious abdominal trouble of ill-defined origin.

Every surgeon of experience occasionally meets with cases in which the severity of these symptoms is strongly suggestive of intestinal obstruction or some other important abdominal lesion; but on opening the abdomen nothing abnormal is found, the symptoms cease, and the patient soon recovers.

Some of these cases are of purely functional origin, those of an acute type being probably due to painful contraction of the small intestine—enterospasm—and those of a chronic type being associated with pain of the nature of "colic" in the large gut.

It is mainly these functional cases to which reference is now made, though it will be seen that it is not uncommon for a definite organic mischief to be the cause of some of the obscure cases of repeated colic.

It is not intended to suggest an explanation of the immediate cause of the interference with the physiological integrity of the muscular or nervous apparatus of the intestines which results in this painful spasm, but rather to discuss its clinical manifestations with a view to avoiding needless surgical intervention. To prevent confusion, the term "enterospasm" will be used to indicate acute cases apparently arising in connexion with the small gut, and the term "colic" will be used for chronic cases which appear to originate in the large intestine.

That enterospasm is capable of simulating an acute abdominal crisis is suggested by the fact that recovery follows operation when the pain and vomiting are sufficiently severe to necessitate a coeliotomy, which is performed in some of these cases because of the impossibility of being certain that the symptoms are merely due to a functional intestinal disturbance. Moreover, in some cases the intestines are actually to be seen markedly contracted at the time of opening the abdomen.

CASE I.—*Enterospasm resembling Acute Intestinal Obstruction.*
Male, aged 63. The patient was subject to constipation, for which he had taken apenta water, and for six months had complained of dull pain in the left flank. On May 5th he had acute pain in the left flank, lasting twenty-four hours. This recurred on June 5th, and again continued for twenty-four hours, accompanied by sickness, nausea, and absolute constipation. After a brief period of improvement in the pain and a slight action of the bowels after repeated enemata, the pain became much worse.

On June 7th I opened the abdomen in the mid-line. The small intestine was empty and contracted, and was greatly congested. No lesion was found. The bowels acted after a turpentine enema on June 9th, and the patient made a rapid recovery. During convalescence sodium sulphate brought away large scybalous masses.

CASE II.—*Enterospasm resembling Acute Appendicitis.*
Male, aged 32. On January 14th he was suddenly seized with pain in the right loin and subsequently in the right iliac fossa. The pain was described as "agonizing," and his doctor gave him a hypodermic injection of morphine. When I saw him, about three hours after the attack commenced, he appeared to be in great pain, and was said to have vomited "about twenty times." The abdominal muscles were very tense especially on the right side, and there was tenderness near McBurney's point. The urine was normal, tongue clean, and temperature normal.

The sickness continued for twelve hours, but the following day the pain was much less after a turpentine enema had brought away a constipated action, though McBurney's point was a little tender. Further actions of the bowels followed after enemata, and the patient was practically well twenty-four hours after the beginning of the attack.

CASE III.—*Enterospasm resembling Perforated Gastric Ulcer.*
Female, aged 25. This patient was subject to vomiting, and was said to have had gastro-enterostomy performed four years previously for gastric ulcer.

On July 11th she was suddenly seized with violent abdominal pain and vomiting, persisting for twenty-four hours. The bowels had acted several times before I saw her on July 12th. The face was flushed and the patient complained of severe pain, chiefly on the left side of the abdomen. The pulse was rapid, and she appeared unable to bear the slightest pressure in the left epigastric region. The abdomen was not so rigid as is usual with a perforated ulcer, and suspicion was aroused by the fact that she had previously had appendicectomy and nephropexy performed, in addition to gastro-enterostomy. She was regarded as a "neurotic," but fearing lest there might be some perforative peritonitis an exploratory operation was performed. Nothing abnormal was found, and she speedily recovered.

The narration of these cases is sufficient to show how difficult it is to be certain that the symptoms are merely due to functional disorder, and though the patient referred to in Case III was so markedly neurotic that it was more than likely that we had to deal with a case of enterospasm, it had to be borne in mind that "neurotics" may suffer from organic trouble as much as ordinary individuals.

The seat of the greatest intensity of the pain generally appears to be referred to the neighbourhood of the umbilicus, there is often a history of irregular action of the bowels, and the abdomen is frequently retracted. In this last respect the condition resembles the early stage of most acute abdominal lesions, and when associated with considerable superficial tenderness it is extremely difficult to exclude some forms of peritonitis. Nevertheless, in many of these cases the general condition of the patient does not suggest a serious mischief, and it is not uncommon to find that the diaphragm acts freely, so that a deep breath may be drawn without adding to the patient's suffering.

In doubtful cases of severe intestinal trouble a gradually increasing distension in association with pain and vomiting may be regarded as a clear indication for operation; but it is not often desirable to wait for this as a means of diagnosis, and it is far wiser to run the risk of operating unnecessarily in a case of enterospasm than to neglect to interfere in an obscure case of acute intestinal obstruction or other morbid abdominal condition which may be amenable to surgical procedures.

Just as enterospasm, by its sudden onset, tends chiefly to resemble organic mischief in the small gut, so colic originating in the large intestine, by its chronicity, is more apt to simulate disease of the lower bowel.

"Colic," as applied in this sense, is much more common than enterospasm, but it must be remembered that the pain associated with such conditions as gall stones, chronic appendicitis, or movable kidney may be mistaken for the functional trouble now under consideration. Some form of intestinal adhesion may be the cause of intestinal pain, and I have occasionally been consulted with a view to operation for supposed appendicitis in cases of colicky pain due to mucous colitis. These and other causes (including "lead colic") of abdominal pain must be considered as possible factors in the production of colic; but, putting such cases aside, we have to deal with "colic" as a functional manifestation independent of organic mischief.

Most of these patients seek the advice of the surgeon because they are supposed to have a commencing obstruction from a growth in the large intestine. The recurrent paroxysmal pain, constipation, meteorism, occasional vomiting, and even loss of flesh in these cases form a collection of symptoms which may be difficult to distinguish from the early signs of stenosis due to an intestinal neoplasm.

A few typical examples may be recorded:

CASE IV.—*Colic resembling Intestinal Growth.*
Male, aged 55. For ten months the patient had suffered from indigestion, and had severe abdominal pain, which appeared to

be behind the umbilicus and passing towards the pubes. These pains were almost of daily occurrence, but he had gone as long as a week without pain. For the past six weeks the pains had been more severe, and he had lost 7 lb. in weight. The pain was accompanied by flatulence and distension, and if he was able to pass flatus the pain was somewhat relieved. During his illness he had been subject to constipation. Nothing abnormal was found on opening the abdomen. He was treated with enemata and purgatives, and had no more pain. When seen about ten months after operation he continued to be free from pain.

CASE V.—*Colic resembling Intestinal Adhesions.*

Female, aged 44. Subject to marked constipation and colicky pains in upper part of abdomen for several years. For some months the pains have been more severe, more frequent, and accompanied by distension. With the pain there was a feeling as if "there was something she wanted to get rid of." Medical treatment was advised, and the pains disappeared. Three years later she was still free from attacks.

CASE VI.—*Colic resembling Cicatricial Stenosis of Intestine.*

Female, aged 44. The patient stated that she had "typhoid fever and peritonitis," during which she passed a "large quantity" of blood per anum ten years previously. Subject to marked constipation since that illness. For the past three years has been subject to abdominal pain and slight distension, and feels as if there had been a "stoppage on the left side of the bowels." Under treatment by purgatives, abdominal massage, and electricity she quickly got well, and continued so when seen four years later.

I have met with many such cases as those recorded above which sufficiently exemplify the difficulty of arriving at an exact diagnosis.

The exclusion of a malignant neoplasm is of the greatest importance. The presence of "occult blood" in the faeces may be found in cases of ulcerating growth, and the prolonged retention of a bismuth meal, as shown by the *x* rays, is of some value in suggesting a definite organic obstruction, but it is unwise to attach much importance to this symptom, and therefore it is generally desirable to keep the patient in bed under observation for a week or two. The food should be light and nutritious, the bowels should be opened regularly with purgatives and enemata if necessary, and the patient weighed at definite intervals.

If under these conditions the symptoms show no signs of improvement and there is a progressive loss of weight, an exploratory coeliotomy is desirable. Even then nothing abnormal may be found, though such cases are usually caused by some form of intestinal adhesion or new growth.

As in the acute cases, it is inevitable that exploratory operations should occasionally be necessary if we wish to safeguard the patient against the overlooking of serious organic disease, but we may justifiably delay operation where the patient shows continuous signs of improvement under the regimen referred to.

In both acute and chronic cases where coeliotomy has proved the absence of any organic lesion the patient is generally cured of his symptoms—at least, temporarily. This is, doubtless, mainly attributable to the rest in bed necessitated by the operation, accompanied by careful dieting and regular action of the bowels.

Constipation is a causative factor in so many of these cases that attention to the proper and regular evacuation of the bowels is of the highest importance if future attacks are to be avoided.

THE annual meeting and launch party of the Brussels Medical Graduates' Association will be held on Saturday, July 13th. The saloon launch *Empress of India* will start from Maidenhead at 12.30 p.m., returning about 8 o'clock. The launch is provided with a cabin and an awning, so that weather conditions are immaterial. The train leaves Paddington at 11.15 a.m. for Taplow, which is the nearest station to Maidenhead Bridge. Tickets, 12s. 6d. each, to include launch, luncheon (not including wine), and tea, may be obtained from the honorary secretary, Dr. Arthur Haydon, 23, Henrietta Street, Cavendish Square, W. At the biennial dinner of the association, which took place at the Trocadero on May 29th, the chair was taken by Dr. Arthur Haydon, owing to the absence of the president in the country. The following were elected officers for the year: President, Dr. Edward Osborne Fountain; vice-president, Dr. Robert Wilkinson; honorary treasurer, Dr. Major Greenwood; honorary secretary, Dr. Arthur Haydon; Council, Drs. Cowburn, Callender, Cullinan, Sington, Howard Humphris, Smallwood, Fielden Briggs, Henry Dutch, and Bryce Macaulay.

C

Remarks ON THE SALVARSAN TREATMENT OF PERNICIOUS ANAEMIA.

BY

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IN March, 1911, I published in this JOURNAL two cases of pernicious anaemia in which great improvement resulted from the administration of salvarsan. In this paper I propose to record the future progress of these cases—they have remained well without any further treatment—and the results in five (all the) other cases treated in the same way. Since I commenced to treat cases of pernicious anaemia with arsenic in the year 1875 I have had a large experience of the disease; the impression which has been made upon my mind by the results of the salvarsan treatment in the seven cases which I am now about to record is, on the whole, very favourable. If my observations are confirmed by further experience, and by other observers, I am disposed to think that salvarsan will probably be found to be a more efficient remedy than arsenic given by the mouth, and indeed than any form of treatment which has as yet been employed in this very grave and intractable disease.

CASE I.

J. S., aged 49, married, electric hoist man, formerly a soldier, admitted to the Edinburgh Royal Infirmary on October 12th, 1910, suffering from marked pernicious anaemia.

Previous History.

The patient came under my observation as an out-patient in October, 1909, suffering from pernicious anaemia, was treated with arsenic, and rapidly recovered. He remained at work and fairly well until the beginning of October, 1910, when he got a chill and rapidly became markedly anaemic. The patient denies venereal disease. The bridge of his nose is sunken; this developed spontaneously at the age of 18, and was, perhaps, due to congenital syphilis; there are no other stigmata of that condition.

State on Admission to Hospital.

The patient presented all the typical symptoms of pernicious anaemia.

The blood count was as follows: Red corpuscles, 1,035,000; haemoglobin, 30 per cent.; colour index, 1.5; whites, 7,800. Differential count: Polymorphs, 56.6 per cent.; mononuclears, 41 per cent. (large 15 per cent., small 26 per cent.); eosinophiles, 2.3 per cent. Marked poikilocytosis, polychromasia and granular degeneration. No nucleated reds were seen.

The patient was very short of breath on exertion; his feet and ankles were oedematous; there were no retinal haemorrhages. The systolic blood pressure was 88 mm. of mercury. Blowing systolic murmurs were present in the mitral, pulmonary, and aortic areas. The tongue was clean and moist. There had been no sore spots on the tongue or mouth. The patient had had no teeth for several years; his gums were perfectly normal; the false teeth which he wears had given rise to no irritation. The urine was pale, specific gravity 1012, and contained no abnormal constituents.

Treatment and Results.

Rest in bed; milk diet; arsenic (Fowler's solution), commencing with 2 minims, three times daily. When the arsenic was increased to 4 minims three times daily, diarrhoea developed; this was, however, easily restrained (as I have found to be the case in other cases) by combining a small dose of morphine (5 minims of the liquor morphinae hydrochlor.) with each dose of the arsenic. The arsenic was gradually increased to 12 minims three times daily. The patient improved considerably under this treatment as regards his general symptoms, appearance, and the condition of the blood.

December 16th. Fowler's solution stopped. Red corpuscles, 1,830,000; haemoglobin, 52 per cent.; colour index, 1.44.

From December 16th to 21st no drugs were administered.

December 21st. Red corpuscles, 1,720,000; haemoglobin, 50 per cent.; colour index, 1.4. On this date the first dose of salvarsan (0.2 gram) was given, the remedy being injected into the left buttock. On January 5th and 19th and on February 9th the injections of salvarsan were repeated, 0.3 gram being given on each of these occasions. Each injection was followed by inflammatory hardness and pain in the buttock, but little constitutional disturbance. The first and third injections were made into the left, and the second and fourth into the right buttock. Coincidentally with this treatment very marked improvement occurred.

February 23rd, 1911. Red corpuscles, 3,580,000; haemoglobin, 78 per cent.; colour index, 1.1. The white corpuscles, which before the administration of salvarsan were 4,600, now numbered 8,000 per cubic millimetre. The systolic blood pressure had increased to 135 mm. of mercury.

Subsequent Progress of the Case.

June 23rd, 1911. The patient stated that he had been quite well since his discharge from the infirmary on February 23rd, 1911, and had had no treatment. Red corpuscles, 4,530,000; haemoglobin, 78 per cent.; colour index, 0.87.

On October 25th, 1911, the patient stated that since last seen he had continued quite well without any treatment and had been doing his full work as an electric hoist man. In July he did a march with the Territorials from Kilmarnock to Troon, a distance of twenty-five miles, without any difficulty or distress.

On March 7th, 1912, the patient stated that, owing to the coal strike, he had been unable to get a train and had had to walk ten miles to a station in order to get to the infirmary in time for the clinic. He was looking and feeling quite well, and showed no disturbance as the result of his ten mile walk. Red corpuscles, 4,680,000; haemoglobin, 94 per cent.; colour index, 1.

The condition of the blood at different dates is shown in Table I.

TABLE I.

CASE I.—*Pernicious Anaemia. Showing the Results of Treatment.*

Date.	Treatment.	Red Corpuscles.	Haemoglobin.	Colour Index.
			Per Cent.	
Oct. 12, 1910 ...	Arsenic begun, 2 m., t.i.d.	1,035,000	30	1.5
Dec. 16, 1910 ...	Arsenic stopped, 12 m., t.i.d.	1,830,000	52	1.44
Dec. 21, 1910 ...	"606," 0.2 gram	1,720,000	50	1.47
Jan. 5, 1911 ...	"606," 0.3 gram	2,500,000	68	1.3
Jan. 19, 1911 ...	"606," 0.3 gram	2,960,000	70	1.18
Feb. 9, 1911 ...	"606," 0.3 gram	3,200,000	72	1.1
Feb. 20, 1911 ...	—	3,380,000	78	1.16
Feb. 23, 1911 ...	—	3,580,000	78	1.1
June 23, 1911 ...	—	4,530,000	78	0 87
March 7, 1912 ...	—	4,630,000	94	1.0

Remarks.—I have seen many cases of pernicious anaemia temporarily restored to apparent health as the result of arsenical treatment, and a few in which the patients have remained well for several years, but rarely, if ever, in the whole of my thirty-seven years' experience of the arsenical treatment, have I seen any cases in which such complete restoration to health has resulted as in this and the next case (Case II). In most cases of pernicious anaemia which apparently have recovered under ordinary arsenical treatment, and in which the normal number of red cells has been regained, the colour of the patients is not, in my experience, quite normal; there is often a yellow tinge of the skin and mucous membranes mixed with the normal red, which to the experienced eye is very suggestive that the blood is not yet quite normal, and the cure is not likely to be lasting. In this and in the next case (Case II), the colour of the patients is absolutely normal; they appear to be in robust health. The fact that this patient (Case I) could march twenty-five miles without any distress seven months after the treatment was commenced, is a striking fact. The condition of the blood (red corpuscles, 6,210,000; haemoglobin, 120 per cent.; colour index, 0.97) in the second case, fifteen months after the treatment was commenced, is remarkable. I do not remember to have seen any case of pernicious anaemia in which such a high blood count was observed as the result of treatment.

CASE II.

Mrs. E. P., aged 40, married, admitted to the Edinburgh Royal Infirmary on November 15th, 1910, suffering from marked pernicious anaemia of four months' duration. The disease commenced soon after the birth of her last child; this and her previous seven confinements were all attended with considerable haemorrhage.

Previous History.

Two years ago a tuberculous tumour was removed from the sternum, otherwise she had enjoyed good health until the present illness commenced. Some three weeks before her admission she suffered from sore spots on the mouth and tongue. For many years past her teeth have been extremely bad. There is no suspicion of syphilis, unless two miscarriages and the death of a child, aged 8 months, were due to syphilis. The patient has six children alive and well.

State on Admission to Hospital.

The patient was very pale; during the past two years she has lost more than a stone in weight. There is a curious patch of herpes on the nose.

The condition of the blood was as follows: Red corpuscles, 990,000; haemoglobin, 30 per cent.; colour index, 1.6; whites, 4,600. Differential count: Polymorphs, 74 per cent.; mononuclears, 17 per cent. (large 6 per cent., small 11 per cent.); eosinophiles, 7 per cent.; basophiles, 2 per cent. Marked poikilocytosis; some nucleated reds; no granular degeneration or polychromasia.

Blowing systolic murmurs were present in the mitral, pulmonary, and aortic areas. The pulse numbered 100. The systolic blood pressure was 108 mm. of mercury. The tongue was pale and clean; the teeth very bad. The urine was dark, specific gravity 1010, and contained no abnormal constituents There were no haemorrhages in the retina.

Treatment and Results.

The arsenical treatment was commenced on November 15th; 2 minims of Fowler's solution three times daily. The dose of arsenic was gradually increased until December 16th, when the patient was taking 9 minims of Fowler's solution three times daily. On November 26th, 1910, a slight thrombosis developed in the lower part of the right calf, but this rapidly yielded to treatment.

December 16th. Fowler's solution stopped. Red corpuscles, 1,460,000; haemoglobin, 45 per cent.; colour index, 1.5.

From December 16th to 24th no drugs were given. December 24th: Red corpuscles, 1,760,000; haemoglobin, 52 per cent.; colour index, 1.48.

On December 24th, January 7th and 24th, and February 9th, 0.3 gram of "606" was injected into the buttocks.

Considerable swelling, hardness, and tenderness resulted from each injection, but there was little or no constitutional disturbance except after the last, which was followed for a few days by a swinging temperature.

Coincidentally with this treatment very marked improvement occurred.

February 21st. Red corpuscles, 4,020,000; haemoglobin 88 per cent.; colour index, 1.1. The white corpuscles, which before the administration of "606" were 3,000, now numbered 6,200. The systolic blood pressure remained practically unaltered during the treatment.

March 3rd. Since the last note there has been pain and pleuritic friction over the lower part of the left chest, and some painless enlargement of the glands in the neck.

March 16th. Patient discharged from the infirmary looking and feeling well.

Subsequent Progress of the Case.

October 13th. Looking and feeling well; doing all her housework. Red corpuscles, 4,800,000; haemoglobin, 96 per cent.; colour index, 1.

March 7th, 1912. Looking and feeling quite well; doing all her housework. Has had no treatment since discharged from the infirmary on March 16th, 1911. Red corpuscles, 6,210,000; haemoglobin, 120 per cent.; colour index, 0.97.

The condition of the blood at different dates is shown in Table II.

TABLE II.

CASE II.—*Pernicious Anaemia. Showing the Results of Treatment.*

Date.	Treatment.	Red Corpuscles.	Haemoglobin.	Colour Index.
			Per Cent.	
Nov. 15, 1910 ...	Arsenic begun, 2 m., t.i.d.	990,000	30	1.6
Dec. 16, 1910 ...	Arsenic stopped, 9 m., t.i.d.	1,460,000	45	1.5
Dec. 24, 1910 ...	"606," 0.3 gram	1,760,000	52	1.48
Jan. 7, 1911 ...	"606," 0.3 gram	2,450,000	68	1.38
Jan. 24, 1911 ...	"606," 0.3 gram	3,125,000	74	1.19
Feb. 9, 1911 ...	"606," 0.3 gram	3,350,000	78	1.16
Feb. 18, 1911 ...	—	4,140,000	88	1.07
Feb. 21, 1911 ...	—	4,020,000	88	1.1
March 11, 1911 ...	—	4,420,000	94	1.1
June 2, 1911 ...	—	4,420,000	90	1.0
Oct. 13, 1911 ...	—	4,800,000	96	1.0
March 7, 1912 ...	—	6,210,000	120	0.97

CASE III.

Mrs. P., aged 54, admitted to the Edinburgh Royal Infirmary on September 1st, 1908, suffering from profound pernicious anaemia.

Previous History.

The patient was a strong, healthy woman until three years previously; then had an attack of "jaundice" which lasted for seven weeks; has had two other attacks of the same sort since, the last about a year ago. For thirteen years has been troubled with bleeding piles, worse for the past few months. No evidence or suspicion of syphilis.

State on Admission to Hospital.

Profoundly anaemic; blowing murmur in all the cardiac areas; liver enlarged; feet swollen; no retinal haemorrhages. Red corpuscles, 545,000; haemoglobin, 15 per cent.; colour index, 1.2; white corpuscles, 3,800. Differential count: Polymorphs, 73 per cent.; mononuclears, 26 per cent. (small 19, large 7 per cent.); eosinophiles, 1 per cent. Marked poikilocytosis; no normoblasts or megaloblasts seen. Appetite poor; thirsty; bowels constipated. Patient stated that for three years she had had no teeth, and that for a long time previously she only had one or two teeth; she had not suffered from dental caries or from a sore mouth; her teeth simply dropped out, and did not decay. The urine contained a trace of albumen, but no casts or other abnormal constituents.

Treatment.

Gradually increasing doses of arsenic, commencing with 2 minims of Fowler's solution three times daily, increased every fourth day by one drop. The maximum dose which the patient was able to take was 10 drops three times daily.

Progress of the Case.

Under this treatment great improvement rapidly took place. On October 1st the patient was looking and feeling very much better: red blood corpuscles, 1,800,000; haemoglobin, 50 per cent.; colour index, 1.2. From October 1st to November 10th, although the general condition improved, there was no alteration in the state of the blood. On November 11th, Robertson's Blaud's pill capsules—one No. 3 capsule (equal to three Blaud's pills) three times daily—were prescribed. Under this treatment striking improvement in the condition of the blood immediately took place. November 20th. Red corpuscles, 3,100,000; haemoglobin, 60 per cent.; colour index, 0.9.

On November 21st the patient was discharged from hospital, and advised to continue the iron.

Subsequent Progress of the Case.

On January 13th, 1909, the patient stated she was perfectly well. She looked very well—many years younger than on her admission to hospital. Red corpuscles, 4,100,000; haemoglobin, 65 per cent.; colour index, 0.7.

September 15th, 1909. The patient stated that she had been well since last seen. Red corpuscles, 2,800,000; haemoglobin, 60 per cent.; colour index, 1.

Readmitted to Edinburgh Royal Infirmary on March 30th, 1911.

After her discharge from the infirmary she remained well for a year; then suffered from severe pain in the abdomen, due to gall stones; was operated upon by Mr. Miles on December 25th, 1909, fifteen gall stones being removed. Made an uninterrupted recovery, leaving the hospital at the end of January, 1910.

Readmitted eight weeks later, when a second operation was performed; an abscess of the gall bladder was opened and drained. Left the hospital three weeks later. Gradually improved and remained very well until January, 1911; then became very weak and anaemic, and has been in bed since.

State on Readmission to Hospital.

Profoundly anaemic and very weak; markedly short of breath on exertion; feet swollen; loud systolic murmurs in the mitral and pulmonary areas; spitting up a good deal of white frothy mucus; vomiting frequently; abnormally sleepy. Red corpuscles, 680,000; haemoglobin, 18 per cent.; colour index, 1.3; white corpuscles, 5,200. Differential count: Polymorphs, 52 per cent.; mononuclears, 44 per cent. (large 6, small 38 per cent.); eosinophiles, 3; basophiles, 1. Many normoblasts and megaloblasts. Coagulation time very much increased; marked poikilocytosis; granular degeneration and polychromatophilia. No retinal haemorrhages. Urine dark coloured, specific gravity 1008, containing a trace of albumen. For some months past had been taking arsenic by the mouth, but not regularly.

Treatment.

Arsenic (2 minims three times a day), digitalis, etc., prescribed.

April 5th. Patient seemed to be in a dying condition. Red corpuscles, 580,000; haemoglobin, 17 per cent.; colour index, 1.47; white corpuscles, 3,600. Arsenic by the mouth stopped.

April 6th, 0.3 gram salvarsan injected into buttock. This was followed by a slight rise in temperature and pulse, but very little local pain.

April 13th. Red blood corpuscles, 972,000; haemoglobin, 22 per cent.; colour index, 1.16; white corpuscles, 3,400.

April 15th. Hypostatic pneumonia of right base. Temperature, 101°. Strychnine, brandy, digitalis prescribed.

April 19th. Red corpuscles, 1,085,000; haemoglobin, 24 per cent.; colour index, 1.15; white corpuscles, 5,100.

April 22nd. Has gradually improved during the past few days; lung is clearing up; pulse better.

April 24th to 28th inclusive. Vomited frequently.

April 29th. All medicine and food by the mouth stopped; nutrient and medicinal enemata.

May 4th. Extremely weak. Respirations 36; heart very feeble; some oedema of feet and hands. Red corpuscles, 490,000; haemoglobin, 18 per cent.; colour index, 1.8; white corpuscles, 6,100. 0.3 gram salvarsan injected into buttock.

May 6th. Somewhat brighter and feeling a little better.

May 8th. Much brighter to-day, but very restless; constantly wanting to be turned from one side to the other.

May 10th. Much better; can lie on her back, which she has not been able to do for a fortnight.

May 16th.—The buttock at the site of the last injection is red and tender. Is talking rather incoherently.

June 1st. Very bright and cheerful; much better in every respect; appetite improving. Red corpuscles, 870,000; haemoglobin, 31 per cent.; colour index, 1.8; white corpuscles, 4,200.

June 9th. General condition very much improved; enjoyed being at an open window and seeing the trees and flowers. Red corpuscles, 970,000; haemoglobin, 32 per cent.; colour index, 1.6; white corpuscles, 6,100.

June 18th. Blaud's pill (one, three times daily) prescribed; increased on July 18th to two capsules.

June 23rd. Vomiting and diarrhoea due to eating strawberries and sweet cakes surreptitiously given her during Coronation festivities.

July 11th. Diarrhoea still troublesome, notwithstanding the administration of tincture of opium. Red corpuscles, 1,020,000; haemoglobin, 28 per cent.; colour index, 1.4; white corpuscles, 4,800.

July 25th. Removed home by her friends, still in a very unsatisfactory condition.

On September 5th, 1911, died. (The patient was not seen after her discharge from the infirmary.)

The condition of the blood at different dates is shown in Table III.

TABLE III.

CASE III.—*Pernicious Anaemia. Showing the Results of Treatment.*

Date.	Treatment.	Red Corpuscles.	Haemoglobin	Colour Index.
			Per Cent.	
Sept. 3, 1908 ...	Arsenic, 5 m., t.i.d.	545,000	15	1.2
Nov. 3, 1908 ...	Arsenic, 10 m., t.i.d.	1,600,000	45	1.2
Nov. 8, 1908 ...	Iron begun, 1 Blaud's pill, t.i.d.	1,800,000	50	1.2
Nov. 20, 1908 ...	—	3,100,000	60	0.9
Dec. 2, 1908 ...	Iron, 2 Blaud's pills, t.i.d.	2,900,000	55	0.8
Jan. 13, 1909 ...	—	4,100,000	65	0.7
Sept. 15, 1909 ...	—	2,800,000	60	1.0
March 30, 1911 ...	Arsenic, 2 m., t.i.d.; digitalis, etc.	680,000	18	1.3
April 5, 1911 ...	Arsenic stopped	580,000	17	1.47
April 6, 1911 ...	"606," 0.3 gram	—	—	—
April 13, 1911 ...	—	972,000	22	1.16
April 19, 1911 ...	—	1,085,000	24	1.15
May 4, 1911 ...	"606," 0.3 gram	490,000	18	1.8
June 1, 1911 ...	—	870,000	31	1.8
June 18, 1911 ...	Iron begun (Blaud's pill)	—	—	—
July 11, 1911 ...	Iron (2 Blaud's pills)	1,020,000	28	1.4

Remarks.—This was a very severe case of pernicious anaemia. During the patient's first stay in hospital a splendid recovery resulted from arsenic by the mouth and iron (Blaud's pill capsules); it is one of the few cases of pernicious anemia in which I have seen striking benefit, with a fall of the colour index, from the administration of iron; in the great majority of the cases of pernicious anaemia in which I have given iron, I have seen either no benefit or distinct deterioration result.

When the patient was readmitted to the infirmary on March 30th, 1911, she appeared to be in a dying condition. Salvarsan was given as a last resource, but none of us who saw her expected that she would even temporarily recover. The results on paper do not perhaps look very striking, but the way in which she temporarily rallied was very remarkable; all of us who watched the case attributed the temporary change for the better to the salvarsan. I have, of course, seen many remarkable temporary rallies and recoveries in cases of pernicious anaemia, but I have seen very few cases, in which the patients were in such a grave condition as this patient was, improve and temporarily recover in the way this patient (and Case VI) did.

CASE IV.

Mrs. H. P., aged 41, admitted to the Edinburgh Royal Infirmary on March 28th, 1911, suffering from profound pernicious anaemia.

Previous History.

Since childhood has suffered off and on from diarrhoea. In March, 1905, had the appendix removed; before this the bowels used frequently to move as many as twelve times a day; after the operation the diarrhoea ceased for twelve months; then had three or four motions a day. No suspicion of syphilis.

In October, 1910, began to suffer from abdominal pains; was

at that time six months pregnant. The child was born on December 30th, 1910; the labour was normal, and there was no excessive loss of blood; she did not nurse the child. After the confinement the diarrhoea became worse—nine motions per day; at the same time she began to have a swinging temperature (betwen 100° and 102°) and persistent vomiting. She got paler and thinner. Her doctor prescribed arsenic, which she took for about ten days with some slight improvement; she has not, however, taken the medicine regularly.

State on Admission to Hospital.

Profoundly pale and anaemic. Red corpuscles, 695,000; haemoglobin, 16 per cent.; colour index, 1.15; white corpuscles, 3,200. Marked poikilocytosis; many megaloblasts and normoblasts; coagulation time increased. Very short of breath on exertion; palpitation and dizziness on assuming the upright position. Systolic murmurs in all the cardiac areas. Numerous small retinal haemorrhages. Tongue large, flabby, and pale, but clean. Teeth all false; has had no teeth for four years; before the teeth were removed the gums used to be sore, but there has been no trouble about the mouth since she was fitted with false teeth. Urine amber colour, specific gravity 1010; no abnormal constituents.

Subsequent Progress of the Case.

April 6th, 0.3 gram of salvarsan was injected into the right buttock. This was followed by considerable swelling, pain, and tenderness; $\frac{1}{6}$ grain of morphine was administered on the evening of the injection.

April 12th. The patient looked and felt decidedly better. Red corpuscles, 1,260,090; haemoglobin, 31 per cent.; colour index, 1.24; white corpuscles, 3,400.

April 21st. Second injection of "606" (0.3 gram); this was followed by very little pain or discomfort.

May 2nd. Looking and feeling very much better. Red corpuscles, 1,495,000; haemoglobin, 34 per cent.; colour index, 1.2; white corpuscles, 2,200.

May 6th. Insisted upon going home in order to nurse her young baby and look after her husband and family. Was warned as to the serious nature of her condition.

April 17th, 1912. Nothing more was heard of this patient until she called to see me by request. Though still somewhat pale, she was looking wonderfully well. She stated that since her discharge from the infirmary she had had no treatment of any kind. For the first three weeks after her discharge, her feet remained swollen and she was very pale and weak. Since then, she had slowly and gradually improved. Since her discharge she had done all her housework, washing, etc., herself; she has four children, aged respectively 15, 12, 9 years, and 15 months. Her husband only earns a small wage, and she had not been able to procure proper or sufficient nourishment. She spontaneously stated: "My case has been a marvellous case, and the talk of a great many people." She stated that for the past week she had had a cold and had not been so well; the cold produced herpes oris and diarrhoea. The condition of the blood was: Red corpuscles, 3,880,000; haemoglobin, 54 per cent.; colour index, 0.7; white corpuscles, 7,800. Considerable poikilocytosis, some myelocytes and nucleated reds. Differential count: Polymorphs, 39 per cent.; mononuclears, 52.5 per cent. (small 29, large 23.5 per cent.); neutrophiles, 4 per cent.; basophiles, 2 per cent.; myelocytes, 2 per cent.; nucleated red, 0.5.

The condition of the blood at different dates is shown in Table IV.

TABLE IV.

CASE IV.—*Pernicious Anaemia. Showing the Results of Treatment.*

Date.	Treatment.	Red Corpuscles.	Haemoglobin.	Colour Index.
			Per Cent.	
March, 28, 1911 ..	—	695,000	16	1.15
April 6, 1911 ...	"606," 0.3 gram	820,000	24	1.49
April 12, 1911 ...	—	1,260,000	31	1.24
April 21, 1911 ...	"606," 0.3 gram	1,230,000	34	1.4
April 28, 1911 ...	—	1,260,000	34	1.3
May 2, 1911 ...	—	1,495,000	34	1.2
April 17, 1912 ...	—	3,880,000	54	0.7

Remarks.—This also was a very severe case of pernicious anaemia. The improvement which has resulted—and it was apparently altogether due to the two injections of salvarsan—is very striking, for since her discharge from hospital this patient has been heavily handicapped by her circumstances and surroundings. The condition of the blood shows that she is still suffering from the disease, but her general appearance and condition are remarkably improved.

CASE V.

W. S., aged 50, married, mason, admitted to Edinburgh Royal Infirmary on May 12th, 1911, suffering from profound pernicious anaemia.

Previous History.

For the past five years has occasionally, for a day or two at a time, suffered from diarrhoea, but in other respects was a strong, healthy man until six months ago.

In October, 1910, began to feel his hands numb and sleepy, and gradually lost strength and colour. Eight weeks ago became short of breath on exertion. A week ago had a sore tongue; had never suffered from sore tongue before. Had lost 2 st. in weight during the past six months. Denies syphilis; no appearances suggestive of that disease.

State on Admission to Hospital.

Very pale and anaemic. Red corpuscles, 970,000; haemoglobin, 28 per cent.; colour index, 1.4; white corpuscles, 5,400. Marked poikilocytosis and polychromatophilia. Differential count: Polymorphs, 76 per cent.; mononuclears, 23 per cent. (small 17, large 6 per cent.); eosinophiles, 1 per cent. Systolic murmurs in all the cardiac areas. Some retinal haemorrhages. Urine amber coloured, specific gravity 1009; no abnormal constituents.

May 15th, 0.3 gram of "606" injected into the left buttock; this was followed by a rise of temperature to 100° F., and a good deal of pain, with subsequent hardness and tenderness.

May 21st. Temperature continues to rise at night to about 100° F.; buttock pain and tenderness still marked. Blood somewhat improved (see Table V).

June 9th. The local pain and tenderness have almost disappeared, but the temperature still continues swinging. The patient looks much worse. Blood worse (see Table V).

June 16th. Temperature has been better lately. The patient says he feels better, but there is no improvement in the condition of the blood.

June 19th, 0.3 gram "606" injected into the right buttock. Very little pain or tenderness resulted.

June 22nd. Looks very ill; diarrhoea. Red corpuscles, 810,000; haemoglobin, 24 per cent.; colour index, 1.5; white corpuscles, 5,400.

June 23rd. Diarrhoea worse; patient collapsed; temperature, 96 2° F.; pulse very feeble, only just perceptible. Transfused with 1 litre of normal saline solution.

June 24th. Temperature fell to 95° F. Vomiting. Died at 5.30 p.m.

Post-mortem examination showed all the typical appearances of pernicious anaemia.

In the left buttock a deep incision showed an extensive necrosis of the muscle substance surrounded by a zone of well-formed fibrous tissue infiltrated with inflammatory cells. In the right buttock deep incision showed a more recent but extensive necrosis of the muscles with marked polymorph infiltration at its margins, but no fibrous tissue formation.

In the midst of each of the necrotic areas there was a large mass of unabsorbed salvarsan.

The condition of the blood at different dates is shown in Table V.

TABLE V.

CASE V.—*Pernicious Anaemia. Showing the Results of Treatment.*

Date.	Treatment.	Red Corpuscles.	Haemoglobin.	Colour Index.
			Per Cent.	
May 12, 1911 ...	—	970,000	28	1.4
May 15, 1911 ...	"606," 0.3 gram	1,030,000	30	1.4
May 21, 1911 ...	—	1,440,000	36	1.25
June 3, 1911 ...	—	1,120,000	28	1.3
June 9, 1911 ...	—	750,000	22	1.45
June 16, 1911 ...	—	825,000	26	1.5
June 19, 1911 ...	"606," 0.3 gram	860,000	26	1.5
June 22, 1911 ...	—	810,000	24	1.5

Remarks.—In this case a slight temporary improvement in the condition of the blood followed the injection of salvarsan, but there was no real improvement; the treatment was entirely unsuccessful.

Post-mortem examination, six weeks after the first injection, showed that a large mass of the salvarsan emulsion was encapsuled in the depth of the gluteal muscles. This is, I think, suggestive and instructive. When I commenced the salvarsan treatment of pernicious anaemia I selected the intramuscular method of administration for two reasons. First, it seemed to me that in pernicious anaemia it would be best to give the remedy in a way which would tend to its gradual absorption and prolonged action. We are yet ignorant as to the exact cause of pernicious anaemia. In syphilis the object is to give it in such a way as to kill outright the spirochaete. In pernicious anaemia no definite micro-organism has as yet been demonstrated. If the disease is due to a micro-organism, that organism is possibly ultra-microscopic.

Secondly, I was afraid that the intravenous injection of salvarsan in severe cases of pernicious anaemia, in which the blood is so profoundly affected, might be attended with dangerous results. Perhaps I am wrong in reasoning in this way; perhaps it would be better to administer the remedy intravenously. My friend, Dr. John Love, who did me the honour of frequently coming through from Glasgow to attend my Wednesday clinic, and who saw some of the cases which I am now recording, tells me that he has treated several cases of pernicious anaemia by the intravenous method with good results.

CASE VI.

P. S., aged 31, married, farm grieve, admitted to the Edinburgh Royal Infirmary on May 17th, 1911, suffering from profound pernicious anaemia.

Previous History.

The patient was quite well till a year ago. In March, 1910, he was confined to bed for ten days with an attack of influenza, and was unfit for work until the middle of May. He was at work from May till September; then the weakness increased, he became anaemic and short of breath, his feet swelled, etc. He was treated with arsenic, which caused diarrhoea and had to be discontinued. A few days before his admission to hospital he had a severe epistaxis. Denies syphilis; no appearance suggestive of that disease.

State on Admission to Hospital.

Profoundly anaemic. Red corpuscles, 955,000; haemoglobin, 26 per cent.; colour index, 1.4; whites, 3,900; marked poikilocytosis and polychromatophilia. Differential count: Polymorphs, 44 per cent.; mononuclears, 56 per cent. (small 44.5, large 11.5 per cent.). Considerable number of nucleated reds present. Systolic murmurs in all the cardiac areas; no retinal haemorrhages. Has never had a sore mouth or tongue. Several of the molars are carious. Tongue pale, clean, and moist.

May 22nd. Complained of pain in the left ear, followed by a purulent discharge and rise in temperature.

May 29th, 0.3 gram salvarsan injected into buttock. Still complaining of pain in the ear; temperature still continues to rise at night; pulse quick.

June 5th, 3 grains of quinine sulphate, three times daily, prescribed.

June 12th. Ear discharge slightly less; 0.3 gram salvarsan injected into the buttock, followed by a good deal of local pain and tenderness; relieved by morphine hypodermically and an ice-bag.

June 16th. Much *in statu quo*. Red corpuscles, 920,000; haemoglobin, 28 per cent.; colour index, 1.55; white corpuscles, 5,300.

July 3rd. Has been in much the same condition till last night, when his temperature went up to 102° and pulse to 120; he complained of some pain and tenderness behind the ear in the region of the mastoid. Red corpuscles, 620,000; haemoglobin, 23 per cent.; colour index, 1.5; white corpuscles, 4,200.

July 10th. Looks very ill; blood condition not improved.

July 12th, 0.3 gram salvarsan injected into buttock; this caused considerable local reaction.

July 28th. No improvement; temperature still swinging; pulse 92 to 124; respirations slow, 12 to 20; passing large quantities of pale urine (to-day 112 oz.). Red corpuscles, 585,000; haemoglobin, 17 per cent.; colour index, 1.45; white corpuscles, 4,500.

August 7th. Removed by his wife to Kinross; not expected to survive the journey.

Subsequent Progress of the Case.

I heard nothing more of this patient until the middle of October, when his doctor told me that he was quite well. For ten days after leaving the infirmary he continued in a semi comatose condition, then began to improve slowly, and in the course of a short time improved more rapidly.

November 11th. The patient saw me by request at the infirmary. He said he felt quite well and was able to walk considerable distances. He looked somewhat pale. Red corpuscles, 3,100,000; haemoglobin, 66 per cent.; colour index, 1.1.

He continued in good health and without any return of the anaemia until February, 1912, when he took an attack of acute croupous pneumonia and died.

The condition of the blood at different dates in shown in Table VI.

TABLE VI.

CASE VI.—*Pernicious Anaemia. Showing the Results of Treatment.*

Date.	Treatment.	Red Corpuscles.	Haemoglobin.	Colour Index.
			Per Cent.	
May 17, 1911 ..	—	955,000	26	1.4
May 21, 1911 ...	—	1,180,000	32	1.4
May 29, 1911 ...	"606," 0.3 gram	—	—	—
May 30, 1911 ...	—	1,300,000	34	1.3
June 12, 1911 ...	"606," 0.3 gram	810,000	23	1.45
June 16, 1911 ...	—	920,000	28	1.55
July 3, 1911 ...	—	620,000	23	1.5
July 12, 1911 ...	"606," 0.3 gram	730,000	22	1.55
July 28, 1911 ...	—	585,000	17	1.45
Aug. 5, 1911 ...	—	600,000	19	1.6
Nov. 11, 1911 ...	—	3,100,000	66	1.1

Remarks.—This was a very severe case of pernicious anaemia, complicated with otitis media. During the patient's stay in hospital the salvarsan treatment seemed to produce no benefit; when he left the hospital he was apparently in a dying condition; no one who saw him expected him to rally even temporarily; and yet, after getting home and being in a semi-conscious condition for ten days, he made a splendid recovery. Now, seeing that one knows that the salvarsan remains for many weeks encapsuled in the gluteal tissues and in a position to be absorbed into the system, I am strongly tempted to attribute the recovery to the salvarsan. The way in which Case IV has gradually improved during the past year, without any other treatment, lends, I think, some support to this view. I am, of course, aware that remarkable temporary rallies and apparent recoveries sometimes occur, apparently spontaneously, in cases of pernicious anaemia. I do not wish to attribute too much importance to the result in this case; all I say is that it is, I think, suggestive that it was perhaps due to the salvarsan.

CASE VII.

T. S., aged 55, married, foreman warehouseman, admitted to the Edinburgh Royal Infirmary on October 24th, 1911, suffering from profound pernicious anaemia.

Previous History.

Was well until July, 1910; then became weak, had occasional diarrhoea, and was confined to bed for two months; was treated with arsenic, recovered, and was able to work for eight or nine months. In May, 1911, had an attack of sciatica; has gradually got paler and weaker since, notwithstanding arsenical treatment. Denies venereal disease; no appearances suggestive of that disease.

State on Admission to Hospital.

The patient is feeble and old-looking, profoundly anaemic, very short of breath, feet swollen. Red corpuscles, 790,000; haemoglobin, 27 per cent.; colour index, 1.7; white corpuscles, 9,600; marked poikilocytosis, many megaloblasts, some normoblasts. No retinal haemorrhages.

October 27th, 0.3 gram "606," given subcutaneously produced very little pain and local reaction. Red corpuscles, 1,030,000; haemoglobin, 26 per cent.; colour index, 1.3.

November 4th. The patient has improved considerably. Red corpuscles, 1,460,000; haemoglobin, 25 per cent.; colour index, 0.8; white corpuscles, 5,600.

On the evening of this day he had a rigor, followed by a rise of temperature and the development of acute bronchopneumonia; he died on November 6th.

Post-mortem examination showed acute bronchopneumonia, with all the characteristic appearances of pernicious anaemia in the different organs and tissues.

The condition of the blood at different dates is shown in Table VII.

TABLE VII.

CASE VII.—*Pernicious Anaemia. Showing the Results of Treatment.*

Date.	Treatment.	Red Corpuscles.	Haemoglobin.	Colour Index.
			Per Cent.	
Oct. 24, 1911 ...	—	790,000	27	1.7
Oct. 27, 1911 ...	"606," 0.3 gram	1,030,000	26	1.3
Nov. 4, 1911 ...	—	1,460,000	25	0.8

Remarks.—In this case bronchopneumonia occurred, and caused death a week after the administration of salvarsan. Whether the treatment had anything to do with the production of the bronchopneumonia it is, of course, impossible to say. During the week which supervened between the administration of the remedy and the occurrence of the bronchopneumonia, the general condition of the patient and the condition of the blood showed a distinct improvement.

ON THE TREATMENT OF SYPHILIS.*

BY

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Syphilis has been so much discussed and its cause and pathology have been made so clear within the last ten years that the treatment has been revolutionized, and it has become necessary to focus our newly acquired knowledge, avoiding rash generalizations on the one hand and an undue conservatism on the other. The field is already so large that it cannot be surveyed satisfactorily by any single observer, and the Royal Society of Medicine has done wisely, therefore, in choosing several Fellows to open this discussion and in allotting to each of them a separate plot. To me has fallen the consideration of modern methods of treatment, partly, perhaps, because I am engaged in general surgery, and so have no special bias towards any particular plan of treatment, partly because, for some years past, I have kept one or two beds in my male and female wards at St. Bartholomew's Hospital for the especial purpose of comparing the relative value of the new methods of treatment.

My colleagues at the hospital have placed me under an obligation by allowing Mr. J. E. H. Roberts to collate the results of the cases of syphilis which they have treated, whilst Mr. Roberts himself has done excellent service in bringing forward the cases upon the present occasion. The pathological department of the hospital, too, under the able superintendence of Dr. F. W. Andrewes and Dr. Mervyn H. Gordon, has given unstinted help in determining the Wassermann reaction in the patients sent to them, so that we have been able to assure ourselves that every patient who was treated really had syphilis, a point of considerable importance and less easy to determine than might appear at first sight.

Schaudinn and Wassermann.

The modern treatment of syphilis dates from the years 1905-1909. In 1905 Schaudinn discovered the spirochaete; in 1907 Wassermann published his test; in 1909 Ehrlich issued his remedy "606." It is necessary to remember these dates, for they show how recent is our knowledge and how tentative must be the results in a disease which has such long-continued and far-reaching results as syphilis. It is still much too early to arrive at any final conclusion, and for many years to come it will be necessary to reconsider the results, and perhaps to abandon many of those points which we now consider to be of the greatest importance.

The first advance towards a scientific method of treating syphilis was made when Schaudinn discovered the spirochaete and brought the disease into line with other diseases of microbic origin. Schaudinn was a skilled biologist, the advances of modern tropical medicine were well known to him, and the weight of his authority was sufficient to stamp the value of the discovery, to fix the position of the micro-organism in the animal kingdom, and to point out by analogy the most likely methods of destroying its virulence.

The second step in the treatment of syphilis was also purely scientific. It was made when Wassermann gave a test founded upon the broad principles of pathology. At first, I fear that I was somewhat sceptical as to the value of the Wassermann reaction, and exactly in those cases where I now know that it is of the very greatest help. It was difficult to believe that a young man, seemingly in perfect health and without a blemish, was suffering from a spirochaete infection simply on a pathological report. I had been brought up in the old school which required some clinical evidence of syphilis before a patient is placed upon a mercurial course. I knew and had taught for years that syphilis was a deceitful disease, the signs and symptoms being intermittent, because periods of apparently perfect health are intercalated with other periods when the manifestations are plain, but it was difficult to rely upon a test made by another person, however skilful and assured he might be. Two or three cases, however, convinced me. In these cases the absence of symptoms, with a very doubtful history of a sore, led me to give too sanguine a prognosis, and decided me to await further evidence although the Wassermann reaction was positive. Mercury had to be given in each of these cases, and I now have faith in Wassermann's test, especially in the very difficult cases where it is necessary to obtain evidence of syphilis apart from the ordinary clinical signs. We must recognize, however, that the test has its limitations. The reaction is not given by every patient even when there are obvious signs of syphilis; it is not usually positive until five to eight weeks after infection, when the disease has ceased to be local and has become generalized in the body; it is positive in 95 per cent. of cases of "secondary" syphilis and in 75 per cent. of "tertiary" syphilis, whilst it is said to be positive in only 50 per cent. when the disease is latent. Moreover, it labours under the disadvantage of being a laboratory test requiring a skilled worker to carry out the technique. In the future this may be overcome in one or two ways: either the test will be simplified, or we shall educate the next generation to become more skilled pathologists than we are ourselves. For the present it is necessary to rely upon the report of another person, and this is somewhat repugnant to my surgical instinct.

Mercury.

Knowing the cause and being provided with a test, it is possible to employ a course of rational treatment in a disease, and this is what has happened in the case of syphilis within the last few years. Mercury, even in our own times, was administered in all cases of venereal disease associated with a sore. The more cautious, indeed, awaited the appearance of "secondary" symptoms; the bolder gave mercury at once if there was a "hard sore" or "Hunterian chancre." But the drug was given for the most part without any system and without any very clear idea of what was to be expected from its use. Too often it was given merely for the relief of syphilitic manifestations and its administration was stopped as soon as these signs disappeared. Little was known of visceral syphilis; still less of syphilis of the nervous system. It is no wonder, therefore, that syphilis was looked upon as incurable, and it actually was so when mercury was given in this haphazard fashion. The remedy further fell somewhat into disrepute, because it was recognized that many syphilitic manifestations disappeared spontaneously whether or not mercury was given. A school arose, therefore, which maintained that guaiacum, potassium iodide, arsenic, and other drugs were just as efficacious. It was difficult to gainsay these statements so long as the cause of the disease was unknown and there was a prevailing ignorance of its natural history. We know now that all these drugs may be useful adjuvants, but that they do not cure, that is to say, they do not destroy the causal micro-organism in the same thorough manner as is done by mercury.

In this country the rational administration of mercury with a view to cure syphilis, and not merely to relieve the signs of syphilis, is due largely to the teaching and practice of Sir Jonathan Hutchinson. We have learnt from him that small doses of the less irritating forms of mercury administered for long periods of time, whether or not signs are present, are more serviceable than large doses given irregularly and for short periods. But as the cause of syphilis was unknown, Sir Jonathan had only his own acumen and experience to guide him, and it was impossible for him to communicate his knowledge personally to any very large number of medical men. His methods, however, came into general use, and even before the discovery of the spirochaete it was admitted that syphilis was curable by those who were prepared to take an infinitude of time and trouble about their disease. There was, however, no test upon which reliance could be placed as to whether or not a patient was cured, and the answer to the question had to depend upon time and circumstances. It was impossible, therefore, to lay down any definite rule as to the duration of a mercurial course, or when it might safely be stopped. The length of a course was dependent upon the presence or absence of symptoms after the administration of mercury had been stopped for a longer or shorter period. It resolved itself eventually into the administration of mercury with regulated intervals for about two years. If at the end of this period no fresh symptoms appeared within the next three months the

* An address delivered at the opening of the discussion on syphilis at the Royal Society of Medicine.

patient was thought to be cured. It is needless to say that this empirical method often led to disappointment, and sometimes to disaster. It became clear, too, as our physicians learnt to associate some of the commoner diseases of the brain and spinal cord with imperfectly treated syphilis, that very many cases of the disease were never really cured, although there had been no external signs for many years after treatment had been discontinued. The Wassermann reaction seems to give us the necessary clue to the process of cure, and syphilis can only be said to be cured, in the light of present knowledge, when the test is negative and the patient remains without symptoms for at least a year after the use of mercury has been discontinued.

The first variation from the methodical and routine administration of mercury by the mouth or by inunction was the use of intramuscular injections. Experience soon taught that it was especially serviceable in those terrible forms to which the term "malignant syphilis" is applied, when mercury was not well tolerated by the digestive tract, and when the patient could not be trusted to follow out his orders. The method of intramuscular injection was reduced to a system by the late Colonel F. J. Lambkin, A.M.S., whose recent untimely death in South Africa we all deplore. The creams of calomel and metallic mercury which he invented give excellent results. Less pain attends their use than when other formulae are employed, and in no case in my own wards was their administration followed by troublesome symptoms when care was taken to avoid the nerves and blood vessels of the part where the injections were made. We learnt that it was better to have the creams dispensed in single doses, each in a hermetically sealed tube, rather than to fill the syringe from a larger supply which had been repeatedly heated to render it fluid. It was necessary also to sterilize the syringe by boiling it in olive oil immediately before use. The cream and the oil then mix readily, whereas bubbles are formed when the cream is drawn up into a syringe which has been boiled in water. The routine treatment was identical with that recommended by Colonel Lambkin, namely:

1. Four injections of calomel cream delivered deeply into the gluteal region. Each injection consists of 10 minims of cream, the dose containing ½ grain of calomel. The cream is made according to the formula:

℞	Calomel ...	...	...	5 grams.
	Creosote }			
	Camphoric acid }	...	...	āā 20 c.cm.
	Palmitin basis ...	...	...	100 c.cm.

2. The injections are made at intervals of a week, and at the end of a month they are replaced by a cream containing 1 grain of metallic mercury in every 10 minims. The composition of this mercurial cream is:

℞	Metallic mercury	...	...	10 grams.
	Creosote }			
	Camphoric acid }	...	...	āā 20 c.cm.
	Palmitin basis ...	...	...	100 c.cm.

Two weekly injections of this metallic mercury cream are given.
3. No injections are given for two months after these six doses have been administered.
4. An injection of metallic mercurial cream is then given every fortnight for two months—that is, four injections.
5. No injections are given for four months.
6. An injection of metallic mercurial cream is given every fortnight for two months—that is, four injections.
7. No injections for six months.
8. An injection of metallic mercurial cream is given every fortnight for two months—that is, four injections.
9. No injections for one month.
10. An injection of metallic mercurial cream every fortnight for two months.

Colonel Lambkin's method marks a distinct advance in the treatment of syphilis. He regarded mercury as a curative agent, and gave it systematically to that end. It is well adapted for the army and navy, and it can be employed advantageously in hospital practice if the patient can be interested in his cure and will attend once a week for the injection. It is less fitted for private practice, where the mere mention of a needle prick is often sufficient to frighten a patient, whilst the needle itself is necessarily longer and stouter than that of a hypodermic syringe. Unskilful technique, too, has caused haematomata, painful indurations, and, occasionally, deep-seated abscesses. The knowledge that such accidents have happened has also had some effect in limiting the more extensive use of a valuable method.

In private practice, therefore, when a patient has declined to be treated by intramuscular injection, and recourse has been had to mercury perchloride and potassium iodide, I have tried to make the mixture somewhat less nauseous than that usually prescribed. I applied to Mr. Langford Moore and Mr. S. Tweedie, the dispensers at St. Bartholomew's Hospital, who recommended the following formulae after making a large number of experiments. In both prescriptions the metallic flavour of the mercury and the acridity of the potassium iodide are successfully masked. The first prescription is for those who like sweet tastes; the second is for those who prefer bitters.

(A)	℞	Liq. hyd. perchlor.	... ...	...	℥j
		Potassii iodidi ...	... ...	...	℥j
		Syrupi	... ...	...	℥j
		Mucilag. tragacanth.	... ...	...	℥ij
		Ol. amygdal. essent. (sine HCN)		...	♏ij
		Ol. cinnamomi...	... ...	...	♏ij
		Aq. chloroform.	... ...	... ad	℥viii
	M. Fiat mist. Sig., Take an eighth part three times daily.				
(B)	℞	Liq. hyd. perchlor.	... ...	...	℥j
		Potassii iodidi ...	... ...	...	℥j
		Tinct. chirettæ...	... ...	...	℥ss.
		Elixir glucidi ...	... ...	...	♏xl
		Infusi. gentianæ	... ...	... ad	℥viii
	M. Fiat mist. Sig., Take an eighth part three times daily.				

SALVARSAN.

I cannot speak from personal experience of the value of the arylarsonates and soamin. The accounts of these remedies did not appear to be very satisfactory, and before I had made up my mind to employ them they had been replaced by salvarsan. It has been extensively employed in my wards, and I think highly of it as a remedy for syphilitic manifestations, although we have not yet sufficient evidence to prove that it cures the disease. I have always used it, therefore, as an adjuvant to mercury, and never by itself or in place of mercury. The present working hypotheses are that salvarsan kills adult and free spirochaetes, whilst it has but little effect upon those which do not lie in close relation with the blood and lymph paths, upon the immature forms, or upon those which are in an intracellular stage. Whether or not we choose to employ one of these hypotheses, two great facts stand out in connexion with the action of salvarsan in syphilis—it cures the symptoms of syphilis in a shorter time than mercury, and it can be employed as a test for syphilis, because in many cases when salvarsan is given to a syphilitic patient whose Wassermann test is negative, the first effect of the injection is to render the reaction positive, although in a short time it again becomes negative. Salvarsan promises, therefore, to be useful as a test for the cure of syphilis effected by other means.

Much benefit is derived undoubtedly from the use of salvarsan, but it is useless to expect miraculous effects from a single injection. It is necessary to use salvarsan methodically if the best results are to be obtained, and the injections must be repeated at intervals of a fortnight to a month. If they are given too near together time is not allowed for the large dose of arsenic to be eliminated, and the symptoms attending the second dose may be more severe than the first.

The net outcome of our experience with salvarsan has been that it serves as an excellent adjuvant to mercury in the treatment of syphilitic lesions. It has proved especially useful in cases of chronic superficial glossitis, in active syphilitic periostitis, and in ulcerating syphilides of the skin. It has been less serviceable in craniotabes, and in cases of osteitis associated with the formation of sequestra, because in these conditions the pyogenic organisms are more important that the syphilitic infection; neither have the results been very satisfactory in cases of syphilitic arthritis, doubtless because many of these inflammations are also associated with a tuberculous infection. So far as we have been able to ascertain no serious accident has occurred in our cases. We have recognized that we were dealing with a powerful arsenical compound and we have endeavoured to eliminate the more obvious risks.

In Parasyphilis.

Personally I have not hesitated to use it in private when the patient desired it, and in one case of parasyphilis I administered it—against my own wish, but at the earnest desire of the patient himself.

A gentleman who had suffered for many years from tabes had a definite Wassermann reaction, he was nearly blind, and he

was unable to walk more than a short distance. I assured him that there was very little probability, on pathological grounds, of his obtaining any good from salvarsan and that he might be made worse. He decided, however, to take all risks, and felt so much relief from the first injection that he determined to have a second. The first injection was given on July 5th, 1911, the second on October 4th—0.5 gram each time. He writes on May 8th, 1912: "I can now hold my water unless the bladder is overfull from drinking three cups of tea or taking a little sherry, and then I pass it more easily than I used to do before treatment. I have improved in balance since the last injection, as I can stand up on my toes without touching anything; my hearing has remained almost normal since December—that has improved more than anything else—my sight has improved a little. I can see light more strongly, but it is very little better. My knee-jerks are no better, and my memory, I think, is not so good for names of people and places." To this his wife adds: "His memory is quite as good or better. I am very pleased to tell you what I think of the treatment you gave my husband last year. It has done him a great deal of good and his life is more worth living, though the cure is, of course, not complete. To give you details: Before the treatment I always had to wait for a favourable opportunity. Now his mind is clear and he can grasp and discuss serious affairs at any time. Formerly he could not be left alone at any time. He could not remember to sit still, and he could not cross a room without help. His balance is now so much better that he can walk anywhere in the house and garden by himself. He is safe not to fall. I am to tell you he can stand up straight alone and put on his coat by way of proving that the balance is good. His hearing is very much improved. The control of the bowels returned, but I regret to say that since January it has failed, and it appears to be weaker than during the previous six months. The bladder remains as before. Now and then he can pass water without the catheter, but with no regularity. As regards distance: Leaning heavily and distressing himself considerably, he could walk two miles. He can now walk the same distance with ease and not leaning on anyone—simply being guided—and will probably walk another mile later in the day. His eyesight is not improved.

This patient seems on the whole to have received benefit from salvarsan, and it will be interesting to discover from similar cases how far this was due to the drug and to what extent it was the result of a firm belief in its efficacy. The positive Wassermann proves that the spirochaete infection was still active, though it was many years since he contracted the disease. The results seem to show that—as might have been predicted—his cerebral functions have improved, whilst his spinal nervous system remains unaltered.

Technique.

The routine of our technique for administering salvarsan has always been the same. It has been given by intravenous injection, and the patient has been kept in bed for twelve or fourteen hours previously. The skin has been prepared by sterilizing it with a 2½ per cent. solution of iodine in rectified spirit. The veins are rendered prominent by the application of a fillet, and when the veins at the bend of the elbow have been used the patient has been made to grasp a ruler or a staff, as in the days of blood-letting. The needle used is that recommended by Mr. J. E. R. McDonagh, which is bevelled to a point on the upper surface instead of beneath, as is usual, and it is provided with a slightly concave plate of metal to allow it to rest more securely on the skin—two small modifications which make the operation of puncture of the vein much easier. It is unnecessary to give either a local or a general anaesthetic when the veins can be made prominent, as is usually the case. A skin incision is unnecessary, and with a well-directed and sharp needle the pain is momentary and infinitesimal. The syringe and needle are filled with freshly prepared and sterilized salt solution and the vein is punctured obliquely upwards. The fillet is then relaxed, and the contents of the syringe are emptied into the vein. This will show whether the vein has been fairly entered, for if it has been missed or transfixed the salt solution will form a bulla owing to the extravasation of fluid into the surrounding tissues. If the salt solution enters the vein freely the syringe is filled with salvarsan solution, which is then injected by syringefuls at a time until the whole pint has been introduced. When all the salvarsan solution has been introduced a syringeful of salt solution is injected to wash out the needle and to free the tissues from any salvarsan which might be adherent to them. Both the salvarsan and the salt solution are kept at a temperature of 105° F. The needle is then withdrawn, a pad and bandage is applied over the prick, the arm is kept in a sling for a few hours, and the patient is allowed to get up when he feels inclined to do so. The salvarsan solution is made by dissolving 0.6 gram of salvarsan in a pint of sterilized salt solution made from freshly prepared distilled water. The solution is neutralized or rendered faintly alkaline by the addition of a 1 per cent. solution of sodium hydrate. It is necessary to have everything sterile, and it adds greatly to the ease of the operation if the rubber junctions connected with the three-way tap of the syringe are made of such thick rubber with so small a bore as to make it difficult to fit it on to the tap, because the ordinary thin rubber tubing is apt to slip off or become flattened if it kinks whilst suction is being made. When the needle is once fairly introduced care must be taken that it does not slip out of the vein. It is therefore handed over to the sole care of the patient if he is competent to look after it, or, if he is nervous, it must be given in charge of a nurse. If the needle slips out, or if the vein is not punctured fairly at the beginning of the operation, it is much better to employ another vein rather than to attempt any rectification in the one first chosen.

Our chief difficulties have been to find a suitable vein. Many of the men have been so self-indulgent as to become fat with lax tissues, whilst in women it is by no means easy to make the veins of the arm prominent. In some cases we have used the internal saphenous, in others it has been necessary to give a general anaesthetic and dissect out the vein at leisure.

Value of Salvarsan.

The sequelae have been trivial—headache, a rise of temperature to 103° to 104°F., with or without a rigor, vomiting, diarrhoea, and stomach-ache, but they have caused no anxiety, and the patient has always been well on the following day. In the majority of cases the patients felt no inconvenience at all. Two bad results have come under my observation, and in both an intramuscular injection of salvarsan had been made. In one case there was extensive sloughing of the tissues at the seat of the injection; in the other an oedematous and painful swelling occurred just below the angle of the left scapula where salvarsan had been injected. The swelling suppurated, was laid open, and in due course healed; but it was a long time before the oedema disappeared.

It seems, therefore, that salvarsan is a useful remedy if its limitations be recognized. How far it is useful in the initial stage of syphilis I do not know from personal experience. It is said that primary sores heal much more quickly if salvarsan is given than if it is not given, but the glands which enlarge as the result of the infection remain harder than normal although they have returned to their natural size. The drug is very useful in the secondary and tertiary stages in those cases where the lesions are due more to syphilis than to pyogenic micro-organisms. It is serviceable, too, in some cases of parasyphilis, but to what extent and under what conditions I am again ignorant from want of personal experience. We still need more information about the treatment of heredo-syphilis with salvarsan, whether it is best to treat the child through the mother, by means of an intermediary, as a goat or cow, or directly—that is, the child itself.

Broadly, I do not think that syphilitic lesions are more completely cured by salvarsan than they are by mercury, but the result is certainly brought about more speedily; and as the administration of salvarsan does not prevent the simultaneous employment of mercury, the two remedies may be serviceably used together. But until we have much more evidence and have proved its efficacy in a very large number of cases for a period of several years, we shall not be justified in saying that salvarsan cures syphilis.

It is necessary to ask, What are the contraindications for the use of salvarsan? About twenty-three fatal cases have been recorded, but several of these were moribund at the time of administration, some were associated with a faulty technique, and in others it was clear that the drug should not have been employed. It seems from the evidence at present available that the intravenous injection of salvarsan is a safe method of procedure if care be taken to administer it in a rational manner and to reasonably healthy persons. The further question then arises, At what period in syphilis should salvarsan be given? The working hypothesis is that the drug destroys the active spirochaetes with which it is brought into contact. If

this hypothesis is correct the sooner a dose is given after infection the more likely it will be to answer its purpose, for we must assume that the microbes are localized at first to the seat of inoculation and to the neighbouring lymphatics and glands. We should also like to know how often salvarsan must be given and at what intervals, remembering that it is desirable to give as few injections as is consistent with a due regard to complete destruction of the spirochaetes. I hope that these points will be emphasized and that we shall obtain answers from those who will take part in the discussion with a larger and more special knowledge than I possess.

Combined Treatment.

What is the best treatment for syphilis in the present state of our knowledge of the disease? Taking, for the sake of example, the case of a surgeon or of a nurse who is inoculated in the course of professional duty, the wound should be well washed under running water, like a wound obtained in the *post-mortem* room. It should then be dried and covered with an ointment consisting of 10 grams of calomel in 30 grams of lanoline. This mercurial ointment should be gently rubbed into the wound for five minutes, and a dose of salvarsan (0.6 gram) should be given intravenously. The prophylactic action of the mercurial ointment appears to end—at any rate experimentally—within twenty-four hours of inoculation; the salvarsan is said to be serviceable in checking the generalization of the disease even when the seat of inoculation has become characteristically indurated and the lymphatic glands are enlarged. The fact, however, that the lymphatic glands do not return wholly to their natural condition after the administration of salvarsan in early syphilis rather inclines me to distrust the drug as a sole remedy, and should lead one to give mercury in some form or another as soon as possible.

A Wassermann test should be made at an early period after inoculation, although it will probably be negative in the very earliest stages, for, as has been stated already, our present knowledge shows that it is usually positive in five to eight weeks after infection; it is positive in 95 per cent. of cases during the secondary stage, and in 75 per cent. during tertiary manifestation, but it is only positive in 50 per cent. of cases where syphilis is latent. Mercury should be given at once when the infection is undoubted, but in the more difficult cases, where the diagnosis is doubtful, it may be withheld until a positive Wassermann's reaction has been obtained.

Preferably the mercury should be given by intramuscular injection, and Colonel Lambkin's formulae are quite satisfactory as far as I have used them. If, for any reason, the intramuscular method cannot be employed inunction may be employed. But when, as in ordinary private practice, the drug has to be given medicinally, I think the perchloride is better than the grey powder which has been used in England for a long time past. It seems to me that so long as mercury is given in small doses, systematically, and for long periods of time, the exact preparation used does not matter very much. The mercury should be given with regulated periods of rest, and a Wassermann's test should be made at the end of each period just before the mercury is recommenced. If the test is negative an intravenous injection of salvarsan may be given with a view to elicit a positive result. If the test still remains negative after this injection the mercury may be discontinued for a further period so long as there are no signs of syphilis, and at the end of a further period of two months the test should be again employed. Marriage may be permitted under these conditions when the Wassermann test has remained negative and there have been no syphilitic symptoms for at least a year.

In this manner we shall avoid giving mercury for a longer time than is absolutely necessary, whilst the drug will be continued until the syphilis is cured, even when the absence of symptoms might seem to make a further mercurial course unnecessary. We shall also have taken a step in advance of Colonel Lambkin, who was obliged to take a time limit with absence of symptoms as a guide for discontinuing a mercurial course because the scientific test had not yet become available.

There are two objections to the use of Wassermann's test as an answer to the question whether or not an individual is cured of syphilis. In the first place, it is purely a laboratory test, and we are consequently at the mercy of the pathologist who makes this examination. This objection is easily surmounted by always employing the same pathologist. The second objection is much more serious. It involves the fallacy that Wassermann's test is an absolute proof of the presence or absence of spirochaete infection, and even in the light of our present knowledge it is certain that we are not justified in making such an assumption, for the figures given above show that the test remains negative in a certain percentage of cases in every stage of syphilis. Clinical experience and the caution begotten of it must still guide our advice therefore, but recent advances in the treatment of syphilis have been so great that we need not despair of obtaining some reliable test even in the immediate future.

ELECTRO-CARDIOGRAPHY AND ITS IMPORTANCE IN THE CLINICAL EXAMINATION OF HEART AFFECTIONS.

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Part I.

The Method Employed in Obtaining Electro-cardiograms.

The electro-cardiographic method is one by means of which curves are obtained of electric changes which result in the body from the activity of the heart's muscle. The installation required for this work comprises a sensitive galvanometer and its accessory switchboards, and an arc light and camera.

The galvanometer used for the purpose is a peculiarly sensitive one;† it is composed of a heavy electro-magnet, the poles of which are closely approximated. Between the poles, and lying in the magnetic field, an extremely light conducting fibre is stretched, which consists of a finely drawn platinum or silvered quartz thread. It is this thread which acts as the recorder. If a small current is passed through it while it lies in the magnetic field, it becomes deflected and takes up a new position, a position which is governed by the direction in which the current flows through it, by the strength of the current and the sensitivity of the instrument. The sensitivity of any given instrument is controlled by the magnification of the string and its tension. The magnification is arranged by means of a microscope driven through one pole of the magnet; the other pole is bored to contain a condenser. A beam of light, falling through the condenser and concentrated upon the string, projects the magnified image of the string upon the screen of the camera. The magnification usually adopted is approximately 600 diameters; it is kept constant. The sensitivity of the instrument, from time to time, consequently depends upon the tension of the conducting fibre, and this is arranged to give a standard deflection for a given electric change. The standard adopted by all who practise human electro-cardiography is the same. When the ends of the string are connected to form a circuit and an electro-motive force of $\frac{1}{1000}$ volt is introduced into this circuit, the deflection of the projected string image amounts to 1 cm. The deflection of the string is in exact proportion to the strength of current which passes through it. Thus, if $\frac{2}{1000}$ volt are introduced into the circuit a deflection of 2 cm. results. If, instead of introducing an electro-motive force from a battery, the human body is connected to the string by suitable means, the string moves in response to changes of potential produced in the body as a result of the heart beat; and the movement of the string's shadow in response to these natural cardiac electric effects is of sufficient amplitude to permit it to be photographed upon a moving plate surface. The photographic apparatus consists of a moving plate camera, the string is vertical, and its shadow falls upon the vertical screen on the front of the camera. Its movements are from side to side across the front of the camera, and across a horizontal slit in the front, behind which the plate

* Working the tenure of a Beit Memorial Fellowship.

† Such a galvanometer is supplied by the Cambridge Scientific Instrument Company.

travels. As the plate travels the shadow of the moving string protects the sensitive surface of the plate from the light, and when the plate is developed the record of the movements remains upon the plate as a white band upon a black background. Prints from this plate, such as are here reproduced, show a black band upon a light background. The plate falls on its end in the camera, the print is turned upon its side for reproduction. As the plate moves the light is also prevented from falling upon its surface by a screen on which fine lines are ruled at intervals of 1 mm. These lines are horizontal in the records and serve to facilitate measurement; each is equivalent to $\frac{1}{1000}$ volt (see Fig. 1). The light is also shaded by a vibrating time marker, which records thirtieths of a second upon the plate.

The object of standardizing the movements of the string is as follows: If allowance is made for the whole resistance of the circuit, consisting of string, the human body, and the connecting wires, the development of a given potential difference at the points of the body from which the current is led off gives rise to a deflection of the string of a definite value, which may be compared with the deflection resulting from the employment of a potential difference of known amount. The same heart will give electro-cardiograms similar in outline and magnitude from time to time; and it will yield similar records with different instruments, providing that the body is connected to the galvanometer in the same manner. Thus an absolute comparison may be made of curves taken from the same subject from time to time; and to a lesser extent of curves from patient to patient. The electro-cardiograms from no two subjects are the same; they differ slightly both qualitatively and quantitatively. Such being the case, and the type of electro-cardiogram remaining constant in any healthy person for long periods, the identification of any individual from his electro-cardiograms is a matter of no great difficulty.

It is customary in leading off the heart currents from the patient to adopt three leads: *I*, horizontal, from the right arm to the left arm; *II*, oblique, from the right arm to the left leg; and *III*, vertical, from the left arm to the left leg. I shall speak of these leads hereafter simply as leads *I*, *II*, and *III*. In the illustrations these leads are marked in the upper left-hand corner of each strip of curve. The limbs are connected to the instrument by plunging them in baths of salt water, the baths being themselves connected to the string. As soon as the string is placed in circuit with the body in this fashion its movements commence, and may be recorded when appropriate adjustments have been made. And within certain limits it is a matter of indifference how far away the patient sits from the instrument; the wires which carry the current from his body may be several miles in length. Providing that they are properly protected, and that their own resistance is allowed for, the records remain unchanged.

The Form of the Human Electro-cardiogram.

The form of the human electro-cardiogram varies according to the points of the body from which the current is derived. As I have said, three leads are commonly employed. For the time being let us consider a single one, the most serviceable—namely, that which is

Fig. 1.—A normal electro-cardiogram from lead *II* (R. A. to L. L.). It shows two heart cycles; each consists of *P*, the auricular summit, and the deflections *Q*, *R*, *S*, and *T*, the ventricular deflections. The line is straight and horizontal during diastole. The normal electro-cardiogram is inscribed only when the heart-beat starts at the normal site, traverses the auricle and the auriculo-ventricular bundle, and is distributed to the ventricle and through its substance by the usual and recognized channels. The time marker of this and subsequent figures is in $\frac{1}{30}$ seconds, and is seen along the bottom edge of the curve. The fine horizontal lines at millimetre distances facilitate measurement. Each centimetre of a heart deflection is equivalent to $\frac{1}{1000}$ volt.

in the nearest line to that of the heart's axis, the right arm to the left leg (lead *II*). Such an electro-cardiogram from a normal subject usually consists of five separate phases, and these are called *P*, *Q*, *R*, *S*, and *T* (see Fig. 1). It is necessary to examine but briefly the meaning of these phases. *P*, the first phase, is due to the simultaneous contraction of the two auricles. *Q*, *R*, *S* and *T* (of which *R* and *T* are the most prominent) are the result of simultaneous contraction of the two ventricles. We will be content with this statement for the time being, without further attempting the explanation of the various summits and depressions of the curves. We have in electro-cardiography the only certain method of obtaining separate records of the movements of the upper and lower chambers of the human heart; and, as we shall see, these records may tell us a great deal as to how the separate chambers are fulfilling their functions.

The curves from the other leads, *I* and *III*, are not altogether dissimilar to those derived from lead *II*; though they never duplicate it (Fig. 2). The main summits,

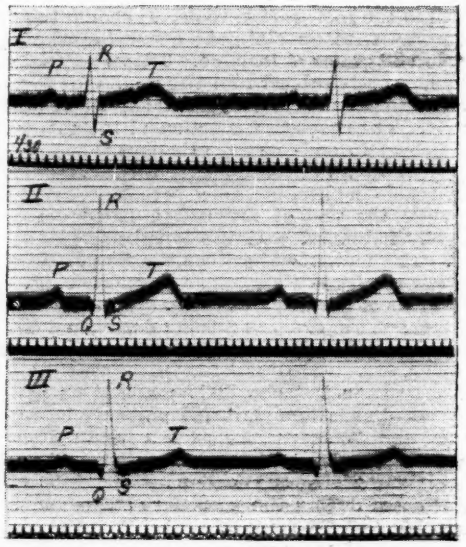

Fig. 2.—Three normal electro-cardiograms from the same subject as Fig. 1. They were taken from lead *I* (R.A. to L.A.), lead *II* (R.A. to L.L.) and lead *III* (L.A. to L.L). Each shows *P*, the auricular representative, and *R* and *T*, ventricular representatives, *Q* and *S* are present in varying degrees. Note the conspicuous *R* summit in each lead and the variations in height of the several deflections from one lead to another. The heights of the peaks in the second lead are similar to those found in Fig. 1. The two figures were taken from the same subject and same lead, but on different days.

P, *R* and *T* are still seen, and *Q* and *S* also appear in varying degree. We shall understand the special values of these leads almost immediately.

The Direction of Lead.

In speaking of the value of electro-cardiograms in the diagnosis and management of cardiac affections, we may choose certain illustrations; in selecting them at the present time, I shall not only choose them as illustrations of the method, but I shall also specially select those which have an immediate and unquestionable practical value. And the first illustration is a simple one; it shows that the direction of lead is all-important, and demonstrates the particular value of a given lead under certain circumstances. Supposing that in a normal subject we lead off from right arm to left arm (lead *I*). The curve which results will be similar to that shown in Fig. 3A. But supposing that we lead off in the reverse direction—that is, from left arm to right arm, what will result? We change the direction in which the same currents flow through the string. Its movements will consequently be of similar amplitude and similar form, but *opposite in direction*. The two pictures will differ from each other in one respect, and one only. The second will be upside down (Fig. 3B). The practical value of this fact is seen when we turn our attention to transposition of the heart. Regarded from the point of view of the heart, the right arm in the subject of heart transposition is where the left should be; the left is where the right should be. Consequently an electro-cardiogram from lead *I* in a subject who has a transposed heart will be similar to an electro-

cardiogram from a normal subject from lead *I*, *but it will be inverted*. In other words, all the summits and depressions of the curve will be upside down. This reversal of the picture applies to lead *I* alone, for it is *the only symmetrical lead*. Now transposition of the heart is a rare condition, but it not infrequently happens that the human heart is displaced, and it is also by no means uncommon that the cause of its displacement cannot be found; in all such instances the question of transposition may arise. The electro-cardiographic method returns a perfectly clear answer to the question, Are we dealing

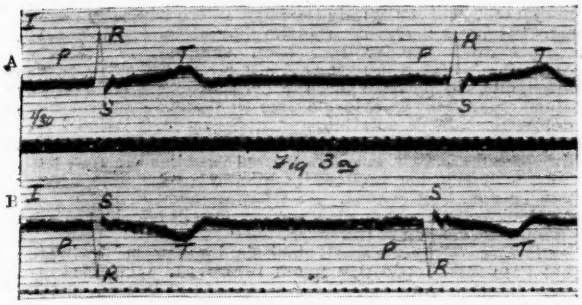

Fig. 3A.—A normal electro-cardiogram from lead *I* (R.A. to L.A.), the only symmetrical lead. *P* is small, *R* and *T* are conspicuous. The deflections are in the usual directions.

Fig. 3B.—An electro-cardiogram from the same subject. The lead was from L.A. to R.A. (lead *I* reversed). The electro-cardiogram is upside down. Such curves are obtained from lead *I* (R.A. to L.A.) when the heart is transposed, and in this condition alone.

with a transposed heart? Displacement of the heart certainly alters the form of the electro-cardiogram, and deforms the normal curve in definite and known ways, which I do not propose to consider at the present time. It is sufficient to know that displacement never yields the completely inverted electro-cardiogram; transposition always does. The electro-cardiographic test is the most certain means of differentiating the two conditions.

Enlargement of the Heart.

The chief object of recording the electro-cardiographic curves of one subject by means of three leads is the attempt to differentiate between right-sided and left-sided hypertrophy of the heart. If curves are taken from normal subjects, it is the rule to find that the summit *R* is a *prominent* upward deflection in all leads (see Fig. 2); *S*, if present, is a *small* downward deflection. If, on the other hand, the same leads are adopted in a case in which there is clear evidence of right-sided hypertrophy, certain changes in the shape of the curves are discovered (Fig. 4). In lead *I*, *R* is *small* or absent and *S* is deep. In lead *III*, *S* is small or absent, and *R* is relatively high. If the curves (Fig. 4) are examined it will be seen that the prominent

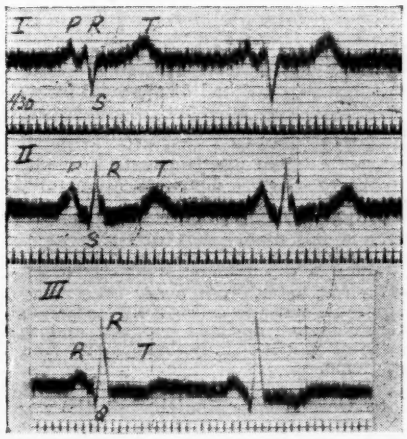

Fig. 4.—Three electro-cardiograms (leads *I*, *II*, and *III*) from a case of mitral stenosis. The figure demonstrates the exaggerated *P* summit in lead *II*, which is so frequently found when there is auricular hypertrophy; it shows the modifications of the ventricular deflections which consort so commonly with right ventricular hypertrophy; *R* is almost absent in lead *I*, while *S* is deep; *R* is tallest in lead *III*, while *S* is absent.

deflections in question, *R* in lead *III*, and *S* in lead *I*, point *towards each other*; the deep *S* of lead *I* and the tall *R* of lead *III* are directed upwards and downwards towards the centre of the figure. If the same three leads are adopted in a frank instance of left-sided hypertrophy the reverse picture may be anticipated (Fig. 5): *R* is large in lead *I*, *S* is small or absent; *R* is small or absent in lead *III*, *S* is large. The exaggerations of the peaks *R* in lead *I* and *S* in lead *III* are *away from each other*.

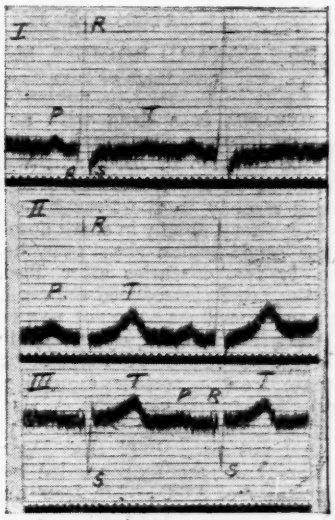

Fig. 5.—Three electro-cardiograms (leads *I*, *II*, and *III*) from a case of aortic disease and enlargement of the heart. The figure shows the modification of the deflections so frequently found where there is left-sided hypertrophy. *R* is tallest in lead *I* and *S* is short. *S* is deep in lead *III*, while *R* is almost absent. The arrangement is the reverse of that seen in Fig. 4.

It is in the new-born child, in pulmonary stenosis, and in mitral stenosis that the first grouping (Fig. 4) is so frequently encountered; it is in aortic and renal disease that the last grouping (Fig. 5) occurs most commonly.

The difficulty of differentiating right as opposed to left-sided hypertrophy in anything but the frankest of cases by ordinary physical signs is well known; often—indeed, frequently—it is impossible. The electro-cardiographic curves are not the least valuable indications which we possess to-day; and they may be of special service in several groups of cases. Apart from the intrinsic value of the differentiation, it is of special importance to ascertain the relative degree of right and left-sided hypertrophy in cases where there are murmurs at the base of the heart. It may be that, with the presence of a diastolic murmur in the aortic area in a patient who has a rheumatic history, a presystolic sound or actual murmur is heard at the apex; and the question arises as to whether stenosis of the mitral valve is present, or whether the apical murmur is of the kind described by Flint and attributable to the aortic lesion also. If it can be decided that left-sided hypertrophy predominates, such a fact emphasizes the aortic lesion; if right-sided hypertrophy predominates, the presystolic murmur may be attributed to constriction at the mitral orifice. Confusion not uncommonly arises in young subjects between the diagnosis of pulmonary and aortic lesions. The two valves which guard the respective arteries are near to each other; lesions of the former are accompanied by right-sided, and lesions of the latter by left-sided, hypertrophy. Again, how fequently one meets with cardiac patients—patients who have mitral stenosis, but in whom the presystolic murmur is absent; in such cases electro-cardiographic examination is often of great value, for it indicates that the muscle of the right side predominates. And this is especially the case, as will appear hereafter, when the heart's action is irregular.

(To be continued.)

THE Section of Balneology and Climatology of the Royal Society of Medicine held its annual meeting this year at Woodhall Spa, in Lincolnshire, on June 1st. The proceedings included a reception given by the directors of the Spa Company, an inspection of the hydropathic establishment, and a demonstration of the various methods of treatment adopted thereat.

THE American Medical Association held its sixty-third annual meeting in Atlantic City from June 3rd to 7th. Dr. Abraham Jacobi was installed as President in the room of Dr. John B. Murphy, and delivered an address on the best means of combating infant mortality. The report of the secretary stated that the membership of the association on May 1st, 1912, was 34,283, a net increase for the year of 323. The report of the treasurer showed that the total assets of the association were 511,759 dollars (a little over £102,351); the net income for the year was 53,815 dollars (£10,763).

THE RAPID CURE OF AMOEBIC DYSENTERY AND HEPATITIS BY HYPODERMIC INJECTIONS OF SOLUBLE SALTS OF EMETINE.

By LEONARD ROGERS, M.D., F.R.C.P., I.M.S.,
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IPECACUANHA is a drug with an interesting past and a brilliant future. The Brazilian root was first brought to Europe by Piso in 1658, and was successfully used by Helvetius in the treatment of Louis XIV, and sold as a secret remedy to the French Government. It was given for dysentery, chiefly in small doses, by Twining and many other Anglo-Indian physicians, but it was not until 1858, exactly two centuries after Piso, that Surgeon E. S. Docker, I.M.S., introduced the use of large doses (60 grains two or three times a day) of powdered ipecacuanha in the treatment of severe dysentery in Mauritius, with the remarkable result of reducing the death-rate of the disease from a former annual rate of 10 to 18 per cent. to only 2 per cent. His excellent results were rapidly confirmed by numerous physicians in India, but it was not until 1880 that Docker's great services to humanity was tardily rewarded by the Government with a gratuity of £400! Maclean and Norman Chevers in 1886 advocated the use of ipecacuanha in the treatment of acute hepatitis, but two or three decades later the pendulum again swung in the opposite direction, and the drug was largely replaced by ammonium chloride in hepatitis and by salines in dysentery, chiefly as a result of the success of the latter in very early and mild attacks of colitis. Indeed, only a few years ago a committee of London pharmacologists actually advised the omission of this invaluable drug from the medical panniers to be taken on field service by the army in India, so far had the Brazilian root fallen in the estimation of the medical profession. During the last few years ipecacuanha has once more gained ground, mainly on account of Sir Patrick Manson's advocacy of it in dysentery, and of the writer's success in the treatment of early acute amoebic hepatitis.

Doubtless, the principal cause of the vicissitudes of ipecacuanha is the production of very disagreeable and exhausting nausea and vomiting by the large doses which are essential to obtaining its full curative effects. This serious drawback is only partially overcome by the present methods of giving the drug in salol or keratin coated pills, and the use of opium, chloral hydrate, or tannic acid to check vomiting. Last year Vedder showed that emetine, the principal alkaloid of ipecacuanha, has the power in high dilutions of destroying amoebae in broth cultures, although it is not clear that this was a pathogenic form, which most recent authorities believe has not yet been cultivated. I have, therefore, tested the effect of the soluble emetine hydrochloride on *A. histolytica* in dysenteric stools. I have found that, on placing a piece of mucus containing numerous active amoebae in normal saline solutions of this salt, the pathogenic organism is immediately killed and materially altered in its microscopical appearances by a 1 in 10,000 solution, while after a few minutes they are rendered inactive, and apparently killed, by as weak a solution as 1 in 100,000.

I therefore decided to try if this powerful alkaloid can be safely administered hypodermically in the treatment of amoebic disease, and have obtained such striking results in a few patients that it seems to be advisable to make them known to others before the ensuing rainy season of widely prevalent amoebic disease. The following three cases, which have been selected because in none of them could the patients take ipecacuanha by the mouth, will suffice for this purpose, although much further experience will be necessary before the full value and limitations of the method can be ascertained.

CASE I.—*Acute Haemorrhagic Amoebic Dysentery, in a Patient who could not retain Ipecacuanha, Rapidly Cured by Emetine Hydrochloride Hypodermically.*

A Japanese female, aged 29, was admitted to the cholera ward under my care with a history of diarrhoea and sickness for three days, with four or five black stools daily, and severe epigastric pain. Specific gravity of the blood 1052, pulse fair, transfusion not necessary. A small stool containing blood and mucus was passed soon after admission, but I could find no amoeba in it. Castor oil mixture and bismuth ordered.

Second Day.—Three stools containing black blood passed during the night. Severe epigastric pain and vomiting of glairy mucus, without blood, still present. Calcium chloride given. By the evening four large black haemorrhagic stools had been passed; the pulse was feeble, restlessness and deep sighing respiration were present, as well as severe epigastric pain. Duodenal ulcer was suspected, and 20 minims of tincture of opium ordered.

Third Day.—At 7.30 a.m. the condition was still grave, but there was less restlessness. A large black haemorrhagic stool had just been passed, in which I noticed a few yellow pus-like streaks, and at once suspected amoebic dysentery. The transverse colon could now be felt as a thickened and tender mass in the middle line above the navel. Ten grains of Dover's powder were ordered. On examining the stool microscopically I found numerous large amoebae having the characters of *A. histolytica*. As the Dover's powder had been vomited, 10 grains of ipecacuanha with 5 of tannic acid was given, but this also was vomited, and the position became critical. As I had recently obtained emetine hydrochloride from England, I dissolved some in sterile normal salt solution, and at 3.30 p.m. injected hypodermically one-sixth of a grain, being the equivalent of 15 grains of ipecacuanha. This small dose was used for the first trial. No local irritation was produced, while, to my surprise, neither nausea or vomiting ensued. At 7.30 p.m. one-third of a grain more was injected, which also produced no ill effects, not even temporary depression of the pulse.

Fourth Day.—Only one small black stool was passed during the night; the general condition much improved. One-third of a grain of emetine hydrochloride was injected at 10 a.m., making the equivalent of 75 grains of ipecacuanha in sixteen and a half hours, without the slightest unpleasant effect on the patient, who had been unable to retain 1 grain when administered by the mouth.

The further progress was uneventful. The next three stools contained steadily decreasing quantities of blood, no further dysenteric motions were passed, and the thickening of the transverse colon could no longer be felt. After another week, during which ipecacuanha was given by the mouth, the patient left hospital, and she sailed for Japan with her husband a few days later in apparently good health.

The remarkably rapid recovery from the very grave haemorrhagic type of amoebic dysentery in this case can, I think, be safely attributed to the hypodermic administration of the active principle of ipecacuanha.

CASE II.—*Severe Chronic Amoebic Dysentery, of Three and a Half Years' Duration, Rapidly Cured by Hypodermic Injection of Emetine Hydrochloride.*

A high class Indian patient, who had suffered from repeated attacks of dysentery for three and a half years, and continuously for six months, during the last four of which he had been bedridden, had been variously treated by a number of eminent medical men, and had had a course of dysentery vaccine, but without avail. Recently four very experienced surgeons had advised colotomy as the only chance of getting the extensive ulcers to heal, but his Indian medical adviser did not think he was in a condition to stand the operation. The stools had been sent to me for examination, and I found amoeba having the characters of *A. histolytica*. When I first saw him in consultation he was extremely emaciated, over twenty foul-smelling stools of pure mucus and blood were being passed daily, his pulse was 120 and over and intermittent, and his general condition very bad. As he was quite unable to take ipecacuanha by the mouth, I advised subcutaneous injections of the emetine hydrochloride. The first dose was one-sixth of a grain, which was rapidly increased to one-third twice a day, being equivalent to 60 grains of ipecacuanha.

On the second day the blood had disappeared from the stools, and faecal matter appeared in them; the mucus then became steadily less, and disappeared finally after ten days. Much pain and trouble arose from extensive ulceration of the rectum, for which 10 grains of calcium permanganate in a pint of water was injected daily, with a good effect, an alum solution being later substituted for it.

After ten days he was able to be weighed, and scaled only 80 lb., although a tall man. His diet was now gradually increased, and during the next two weeks he put on 8 lb. in weight. The emetine was gradually reduced until only one-sixth of a grain was being given every other day to guard against a relapse. He was now eating solid food, and able to get out into the verandah morning and evening, and was passing two or three faecal motions daily, being quite free from all dysenteric symptoms.

His relations were much astonished at the result of the treatment, while I can testify that his recovery is by far the most remarkable I have seen in chronic amoebic dysentery, the difficulty in dealing with which is so well known to all workers in the tropics. I have no shadow of doubt that he owes his life and rapid recovery entirely to the new method of administering the active principle of ipecacuanha. He never once vomited during the treatment, while after the first few doses there was also no nausea, although he received the equivalent of 1,000 grains of ipecacuanha within four weeks.

CASE III.—*Acute Hepatitis, in a Patient who could not take Ipecacuanha by the Mouth, Rapidly Cured by Emetine Hydrochloride Hypodermically.*

A European lady who had been suffering from fever and pain over the liver for ten days had had an attack of dysentery some two months before. Widal tests for typhoid and paratyphoid were negative. Ipecacuanha was now given by the mouth for three days, with the result that the hepatic pain became less and the temperature declined to a lower level.

On account of the great nausea and vomiting she now refused to continue the ipecacuanha, and during the next three days the temperature rose steadily to reach 103° F. in the evenings, and the hepatic pain recurred. At this period I was asked to see her in consultation, and injected one-third of a grain of emetine hydrochloride in the afternoon. The temperature fell steadily during the next twenty-four hours to 100° F., and the pain had also disappeared. I now gave a second injection of half a grain, equal to 45 grains of ipecacuanha. No vomiting, and practically no nausea, was caused by these doses, and her medical attendant reported to me that she was much better.

Four days later I was again asked to see her, as the temperature had once more risen to 103° F., and it was feared that liver abscesses would result if the disease was not quickly cured. I repeated the former doses on that and the following day, and the temperature declined steadily, to reach the normal in three days, when two more similar doses were given to guard against any recurrence, and no more fever or other trouble has occurred.

Emetine hydrobromide may also be given subcutaneously, but is not quite so soluble as the hydrochloride.

In view of the strikingly good results obtained in these three cases, which are illustrative of the most important types of amoebic disease, and in each of which the administration of ipecacuanha by the mouth was impracticable, I venture to think that no apology is needed for bringing this method of treatment to the notice of physicians in the tropics without delay. Should further results fulfil the great hopes raised by the successes above recorded, it will be difficult to exaggerate the boon which will be conferred on the numerous sufferers from the intractable and deadly amoebic form of dysentery and its very serious hepatic complication.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ON THE GENESIS OF THE VENOUS PULSE.

I AM sorry not to have replied earlier to the letters of Dr. Wilkinson and Dr. Verdon which appeared in the JOURNAL of May 4th, but my absence from home prevented my attending to them.

Dr. Wilkinson says that the *a* wave of the venous pulse ought to be greater in the vertical position, if my suggestion that it is an inertia wave be true, "for then the inertia of the column of blood in the vein is augmented by the effects of gravity." He forgets, however, that the amount of blood which comes down from the head depends on the amount which goes up, and gravity opposes its going up in the arteries quite as much as it encourages it to come down by the veins, and consequently has no resultant effect on the flow. The second part of Dr. Wilkinson's letter is probably correct, but I was not discussing in my communication what takes place in abnormal conditions, such as the instance he gives when the auricle and ventricle contract together, where, obviously, if the auricular contraction be forceful enough to effect anything it must be a regurgitation.

Dr. Verdon definitely states that the blood "stream is swifter" in the jugular vein in the upright position than in the recumbent. Whether this statement is based on observation or inference I do not know, neither can I judge whether Dr. Verdon means that more blood comes down the jugulars in the erect than in the horizontal position. A "swifter" flow may go with less blood if the jugulars are contracted. If more blood comes down more must have gone up, and it would seem on this supposition that a fainting person gains nothing by lowering the head, which is contrary to experience.

Whatever the origin of the *a* wave the horizontal position is likely to develop it, since the tone of the vessels relaxes, and oscillations in them are far more easily produced. Moreover, the acclivity and declivity of the *a* wave is not necessarily steep, as Dr. Verdon maintains it would be if it be caused by inertia and the block be sudden. The steepness depends chiefly on the yield of the jugular, which is gradual, the oncoming blood being stored in it as it arrives.

The jugulars commonly dilate considerably on lying down, and are capable of much bigger oscillations, to which rather than to auricular regurgitation is to be attributed the exaggerated appearance of the *a* wave in the horizontal position.

Clyst St. George, Devon. D. W. SAMWAYS.

REPEATED BREECH PRESENTATIONS.

I READ with interest Dr. Ilott's letter, *re* breech presentation.

Last year I was called in to see a woman in labour (I had never seen her before), and on arrival I found her sitting on the edge of the bed suffering from a great fit of depression. On inquiring the cause, she informed me that her three previous confinements had been breech cases, the children dying immediately after birth; she also said she felt convinced that the coming child would be a breech presentation and would die like the rest, hence her depression.

On examination, I found that there was a breech presentation, and, to cut the story short, I delivered her of a male child, which, after some artificial respiration, took to life with great gusto, and is now as fine a baby as it is possible to find. The patient informed me that her firs- youngster (now some 8 years old) was a normal head pret sentation, but that all the others were breech presentations.

Cosham, Hants. H. TAYLOR MORGAN, M.D.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.

Swansea, April 25th, 1912.

Dr. BIDDLE, President, in the Chair.

Plumbism.

DR. ARBOUR STEPHENS read a paper on plumbism. He said that, as appointed surgeon under the Factory Act for lead processes, he had had considerable opportunities of observing men employed at lead works, their dangers, and the consequences. The symptoms were more or less classical and fairly well known. One symptom he would draw attention to, because it was unreported but had been observed by himself, was a tenderness over the sciatic nerve in its lower third, the upper part being practically free from such tenderness. The difficulty was to decide in a large number of cases what part alcohol had played. *Mode of admission:* (1) *Skin*, said to have occurred by the use of cosmetics; (2) *lungs*, which Dr. Goadby has tried by experiments to prove is the main one, but with which Dr. Arbour Stephens could not agree; (3) *stomach*, into which lead got by eating food with dirty hands, chewing, cigarette smoking, and suchlike methods. The foremen and undermanagers never got plumbism. The test for KCNS in the saliva was interfered with if the man had been eating any sugary material. All persons working before furnaces developed a red line on the gum, and on this red line the lead was readily deposited. What was the origin of this red line? Was it inflammatory? Prevention could be brought about by cleanliness as to food and other habits. Cigarette smoking ought to be stopped, and chewing was most injurious. The rotten teeth should be removed, as they tended to give rise to gastritis. A preliminary gastritis by the accompanying increase of absorbing surface tended to produce absorption of lead, and so hastened an "attack." The plentiful supply of fruit last summer increased the number of cases of lead colic. The blue line was nearly always preceded by a red one, which was always found with furnace men. The best treatment for the early stages of plumbism was by means of the internal administration of calcium permanganate.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

Special Meeting of Fellows.

Monday, June 10th, 1912.

Sir Henry Morris, Bart., in the Chair.

Discussion on the Prevalence, Relations, and Treatment of Syphilis.

The President having briefly introduced the debate, called upon Dr. Norman Moore to deal with syphilis from the point of view of its prevalence and intensity in the past.

Dr. Norman Moore then drew attention to the poem of Hieronymus Fracastorius which was published in 1530, and which had provided the name for the group of diseases due to specific infection, and usually acquired during sexual intercourse. This poem showed clearly that at the time it was written syphilis was not only a very prevalent disease, but also one of recent introduction. A supposition, first put forward by Freind in the second volume of his *History of Physic*, was to the effect that syphilis had been imported from America by those who accompanied Columbus home at the end of the fifteenth century. But recent investigation had thrown doubt on this point; for instance, examination of the skeletons of natives of America found in tombs of a date earlier than the voyage of Columbus showed no evidence of syphilis; while on the other hand there was evidence of several kinds that after that date the natives of America suffered from syphilis very severely indeed. He then showed how far the writings of Galen and others might be held to support a belief that syphilis prevailed in the days of early European civilization, and of Imperial Rome. It was now generally admitted that syphilis was the principal, if not the sole, cause of locomotor ataxy and general paralysis of the insane. These were conditions not likely to be overlooked by such an acute observer as Galen; yet there was nothing in his works to indicate that he had ever seen instances of them. An examination of the *Commentaries* of Hippocrates suggested that he too had not observed these diseases. This consideration, coupled with the fact that it was generally admitted that in classic writings there was no direct reference to syphilis, seemed to justify a belief that though syphilis was not imported from the American continent, yet it did in fact for some at present undiscovered reason make its first appearance in Europe at the end of the fifteenth century.

Mr. D'Arcy Power then dealt with syphilis from the therapeutic standpoint in a paper which is published in full at page 1418 of this issue.

The opening of the debate was then concluded by Dr. Mott, who dealt with syphilis in relation to public health. He said there were no reliable statistics to show that syphilis was really less prevalent than formerly, and suggested that the common belief to this effect might be quite ill-founded, the disease now assuming latent forms, but otherwise being quite as prevalent as ever. It was quite natural that among people syphilized for generations past the form of the disease should be degenerative, and therefore more or less latent in its exhibitions. Latency was still more comprehensible in an age when the *locus minoris resistentiae* was the nervous system. In any case a vast amount of acquired nervous disease was due to syphilis, and a large proportion of all congenital idiocy was brought about by congenital syphilis. Some fifteen years ago he had published a number of cases which seemed to him to justify a belief that syphilis of the central nervous system could be entirely cured, but subsequent experience had modified his views.

The debate was then adjourned until June 17th.

On its resumption Mr. Ernest Lane led off with a careful statement of his view regarding the arylarsonates, showing that though double optic atrophy with incurable blindness had now and then occurred after their use, there was usually a rapid disappearance of the symptoms of syphilis. Salvarsan he regarded as a valuable additional remedy for syphilis, though he did not find its influence so striking as had been alleged, and that opinion was based upon an experience with 300 cases. His practice was to follow the salvarsan with mercury intermittently for two or more years, according to the result of the blood test. Mercury was a cure for syphilis if continued sufficiently long. He had even advocated its administration for seven years. Injections for syphilis should not be given by any one but those who saw injections frequently given by others. Two cases of death following the injection of salvarsan had occurred at the Lock Hospital, but in neither of them could he say death was not due to the severity of the disease, though perhaps greatly helped by acute arsenical poisoning. He had treated 17 cases with neo-salvarsan, and found it followed by less reaction than in the case of salvarsan. In some there was temporary jaundice, and a rise of temperature accompanied by drowsiness. Johar, a method of introducing salvarsan intramuscularly, was less likely to be followed by necrosis at the site, or by pain or toxic symptoms. The best results seemed to follow a combination of salvarsan and mercury.

Mr. Jonathan Hutchinson described a fatal case following the injection of salvarsan, in which, however, the solution was strongly acid. This was much more dangerous than when alkali. He quoted from Dr. Mackintosh's statistics at London Hospital, that of 160 patients treated at that institution by mercurial pills alone, 92 per cent. gave a positive Wassermann reaction during the first year, and examined after the second year, 54 per cent. Cases treated more than two years reacted positively in 30 per cent. Statistics from different users of mercury seemed to show that it was practically immaterial which form of the drug was employed, but all agreed that the patient must be kept steadily under its power for a long time. Salvarsan seemed to fail absolutely against leucoplakia, as did other remedies; but bone pains, such as cephalalgia, disappeared magically under salvarsan. Interstitial keratitis was very difficult to influence. Salvarsan was a valuable addition for malignant precocious syphilis. He concluded with a carefully propounded expression of opinion that Shakespeare himself was, later in life, a victim of the disease.

Mr. J. E. R. McDonagh spoke vigorously and definitely on the subject from the public health standpoint. The reluctant public attitude he attributed to the scourge being looked upon as a punishment for sin and not as a disease, and if a parliamentarian were to ventilate the subject he would soon lose his seat. A few deaths had recently been found to be due to anterior poliomyelitis, and every care was at once taken, yet hundreds of thousands died of syphilis and no public voice was raised to stamp out the disease. Boys and youths in schools and colleges should be taught the dangers, and the view insisted on that extramatrimonial indulgence was wrong, and abstention from it was no reflection upon their manliness. In the army, members of the Royal Army Medical Corps should lecture on the subject to soldiers. He insisted especially on a knowledge of venereal diseases being taught in general hospitals. He favoured such diseases being made notifiable to a central bureau composed of specialists. Every case should be notified to head quarters, giving particulars but no names. Medical advice given on the subject by chemists and quacks he would make criminal. He insisted that a woman could give birth to a syphilitic infant without herself showing signs of the disease. He had given over 200 injections of neo-salvarsan and found it preferable to salvarsan, but its influence should be augmented by mercury given intramuscularly. Cases of malignant syphilis were sometimes made worse by the mercury, but Zitman was good for those. Neo-salvarsan should not be kept at a temperature higher than 80° F. In the case of both salvarsan and neo-salvarsan, the higher the temperature of the preparation the more toxic was the solution.

Mr. Macleod Yearsley devoted his remarks to auditory nerve deafness in congenital syphils. Dr. Kerr Love, of Glasgow, and he were working at the subject. At the London County Council schools for the deaf he found that of 570 cases of acquired deafness of which the cause was ascertainable, 39, or 6.7 per cent., were due to congenital syphilis. Ordinary antisyphilitic remedies seemed to be of but little use in these cases. Repeated blistering did good in some instances, and he had seen good follow the use of pilocarpine in the early stages.

Mr. Briscoe spoke of the ravages in family life caused by syphilis, and its dire effects on public health. The

latter should be placed fairly before the Legislature. He considered it was the exception for the syphilized person to be really cured, and gave a picture of the cruel results of syphilis in inmates of lunatic asylums, often as the result of one sexual lapse with an unclean woman. He looked hopefully for preventive measures to stay the inroads of the disease.

Dr. G. PERNET considered everything pointed to syphilis having been imported by Columbus. He much preferred the term "congenital" syphilis to "inherited," as there was no proof of inheritance of this disease any more than of tuberculosis and leprosy. He preferred the original Wassermann test to recent modifications of it. He did not agree with Mr. McDonagh's attitude about notification, holding that the confidential relations of doctor and patient should be maintained inviolate. He agreed that salvarsan should be followed up by mercury, though that might not be necessary with neo-salvarsan. He was eclectic. In conclusion he emphasized the need for teaching the dangers of infection by syphilis in hospital; he had known students and nurses contract digital chancres owing to the lack of such teaching. In this respect England was far behind the Continent.

Mr. C. F. MARSHALL sent a contribution in which he expressed his adherence to the old remedy, mercury. The time during which salvarsan had been in use was too short to permit of any very accurate generalizations in regard to it. Potassium iodide he regarded as the chief auxiliary, and preferred it to iodipin.

The debate will be concluded on June 24th.

SURGICAL SECTION.

Tuesday, June 11th, 1912.

Mr. CLINTON T. DENT, President, in the Chair.

Operative Treatment of Constipation.

MR. LOCKHART MUMMERY recorded 30 cases of intractable constipation treated by operation. Such cases were quite common, and usually came to the notice of a surgeon after some years of ineffective medical treatment. They fell into three main groups—the obstructive, the atonic, and those due to increased viscidity of the faeces. The symptoms produced were loss of weight, headache, loss of appetite, mental depression, enteroptosis, and pigmentation accompanied by a dull, earthy pallor. These symptoms were due to the absorption of toxins, though some persons appeared to be immune. The majority of cases were due to some obstruction; the sigmoidoscope was invaluable in their diagnosis, especially in the detection of adhesions. He had no faith in the diagnosis of intestinal kinks by *x* rays. He thought *x* rays were useful in cases of intestinal ptosis. Kinks were caused by adhesions, and led to pain, which came on two to three hours after food or before defaecation. The cause for the adhesions was not always apparent; they occurred after abdominal operations, but could be prevented by perfect asepsis and haemostasis, providing no raw surface was left and the peritoneum was undamaged. The best results were obtained in those cases caused by a single adhesion; when multiple adhesions were present a short circuit was often necessary, as they were liable to re-form. Appendicostomy was useful to wash out the colon and so remove the intestinal toxaemia. Intractable constipation was produced by many different causes. He could not agree with Mr. Arbuthnot Lane that there was practically only one—namely, ileal kinking. Dr. HALE WHITE thought that most cases could be cured without operation by a long course of medicinal treatment. No obstruction was produced in cases of peritonitis, though the intestines were often matted in an inextricable mass. His objection to operation was the frequent re-formation of adhesions. Mr. GORDON WATSON said that kinks were usually non-pathological: adhesions would neither form or re-form if during abdominal operations asepsis and haemostasis were carried out. Mr. CHAPPLE pointed out that no ileal kinks occurred in the fetus. He had frequently seen cases of intractable constipation caused by ileal kinks; they were diagnosed by *x* rays, found at the operation, and the patients were cured by their removal. Mr. CARSON said pericolitis often passed unobserved owing to the point of maximum pain being situated over McBurney's point; appendicectomy was performed through a small incision, and the real condition not diagnosed. Mr. LOCKHART MUMMERY, in reply, said that a single band was more liable to produce obstruction than a number of adhesions. He did not think that ileal kinks, or so-called membranous pericolitis, caused any symptoms at all, and that the caecal angle was liable to certain abnormalities.

Venous Thrombosis of the Colon.

Mr. H. W. CARSON recorded a case in which the symptoms were alternate diarrhoea and constipation, with passage of blood per rectum; a diagnosis of malignant disease of the sigmoid was made and a laparotomy performed. A portion of the colon was found to be much swollen, owing to venous thrombosis, and was removed.

SECTION OF LARYNGOLOGY.

AT a meeting on June 7th, Dr. STCLAIR THOMSON, President, in the chair, the proceedings related to *Sphenoidal sinus suppuration*, and a large number of cases, specimens, and instruments in point were shown. Among them were the following:—Dr. STCLAIR THOMSON: Four patients as exemplifying the results of operative treatment of sphenoidal sinus disease. In three cure of discharge had resulted; the fourth patient, who had suffered from severe ocular pains which prevented her using the eyes, had been relieved of this disability, although there was still some nasal discharge present. Dr. WATSON-WILLIAMS: A number of instruments, old and new, employed in operating on the sphenoidal sinus, together with a series of pathological specimens, stereoscopic and other diagrams. Mr. HERBERT TILLEY: Cases illustrating the good results of operation on the sinus. Mr. W. STUART LOW: Two cases, in one of which sphenoidal sinus suppuration had induced considerable loss of vision in both eyes. Dr. W. H. KELSON: A case of suppuration in the antrum, ethmoidal cells, and sphenoidal sinus, in which operative measures had been followed by benefit. Dr. W. JOBSON HORNE: A series of sphenoidal and other bones illustrating the anatomy of the region. Dr. H. FITZGERALD POWELL: A case of sphenoidal sinus suppuration causing severe occipital headache which had been cured by opening up the sphenoidal sinus. Further cases of ethmoidal and sphenoidal sinus disease were shown by Mr. CYRIL HORSFORD, Mr. G. SECCOMBE HETT, and others, while Dr. H. J. DAVIS had on exhibition a number of *x*-ray and other photographs illustrating sphenoidal sinus suppuration and its complications. In the discussion the question of the differential diagnosis between sphenoidal cell suppuration and cerebral tumour was considered. It was agreed that expert examination of a skiagram of the skull served, in most cases, to establish the diagnosis on a sure basis. Regarding operative technique, preference was expressed for the use of cutting forceps rather than hooks; chiselling the thick floor of the sinus had been practised, but caution was needed to prevent the point of the chisel entering the cranium through a thin-roofed sinus. Dr. WATSON-WILLIAMS advised the removal of the posterior part of the nasal septum when it was necessary to open and drain both sphenoidal sinuses. With reference to the after-history of these cases, the general view seemed to be that they tended to get well slowly and of their own accord, and the PRESIDENT advised against too frequent surgical interference. Several speakers bore testimony to the value of vaccines in hastening the cure of chronic discharge from a sinus which had been opened.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Friday, May 31st, 1912.

Dr. A. J. HORNE, President, in the Chair.

Vaccine Treatment.

DR. R. J. ROWLETTE, in a paper on the use of vaccines in the treatment of puerperal sepsis, recorded 54 cases thus treated in the Rotunda Hospital. In 39 of these the treatment had been based on a bacteriological diagnosis. The diagnosis was made from the lochia obtained by Döderlin's tube. Thirty-one of the 39 cases were of streptococcal infection, the remaining 8 of staphylococcal. The dosse

given were, in the case of streptococci, 2½ to 10 million; in the case of staphylococci, 20 to 50 million. Injections were given at intervals of forty-eight hours. The typical result of an injection was a drop in temperature and pulse occurring in from twelve to thirty-six hours. In streptococcal injections better results were got by combining the use of antistreptococcal serum with that of the vaccine. Three deaths occurred in the streptococcal series. One patient was in advanced phthisis, another was moribund from gangrenous appendicitis when she entered hospital; the third showed considerable improvement under vaccine treatment, but died from an abscess of the lung when the supply of autogenous vaccine had been exhausted. Of the staphylococcal series, one patient died of pyaemia the result of thrombosis of the ovarian veins. Tables, with full particulars of all the cases, were submitted, and charts were shown illustrating special points. The general conclusions drawn were: (1) Vaccines in small doses do no harm in puerperal sepsis; (2) in a large proportion of cases they do good; (3) autogenous are more effective than stock vaccines; (4) antistreptococcal serum simultaneously increases the effect of streptococcal vaccine; (5) failure in treatment is generally the result of failure in diagnosis. Drs. LUMSDEN and A. N. HOLMES recorded a case of vaginitis treated by vaccines. The general condition of the patient greatly improved, but the local condition did not become cured. Lactic acid douching of the vagina was combined with the vaccine treatment.

Haematocolpos and Haematometra.

Dr. M. J. GIBSON showed (1) a specimen removed from a girl aged 20, who was both mentally and physically defective. She could not give a clear account of her symptoms, but it was ascertained that she had suffered from pelvic pains for about four years, and had never menstruated. Examination showed a large tumour occupying the lower abdomen, reaching to the umbilicus. A vagina was not to be seen. Examination by the bowel showed that the tumour filled the pelvis completely. The abdomen was opened and the tumour removed entire. The patient's convalescence was uneventful. The uterine arteries were not to be seen during the operation. The patient was now in a much better state of health, and her mental condition was improved. (2) A specimen removed from a girl aged 19, who had been menstruating regularly since she was 15 years of age. Fourteen months before operation she began to suffer from sciatica, and twelve months later a tumour was to be felt a little above the pelvic brim. The pain at this time was intense, needing injections of morphine. The patient was then sent to him, and he found that the pelvis was occupied by a tense cystic tumour, at one side of which a small uterus was to be felt. The vulva, vagina, and vaginal portion of the cervix were apparently normal. The tumour was fixed in the pelvis, and was considered to be a pelvic abscess. On opening the abdomen, a uterus with only one tube and ovary was to be seen at the right side of the pelvis, and at the other side, well above the pelvic brim, the left tube and ovary were seen attached to the apex of the tumour. A diagnosis of double uterus and vagina was then made, and the mass was removed entire, leaving the ovary. The patient recovered very well from the operation, and is menstruating normally.

A DISCUSSION on tuberculosis and sanatorium benefits under the Insurance Act will be opened at a provincial meeting of the Royal Sanitary Institute at Torquay on July 5th by Dr. George Adkins, County Medical Officer, Devon.

IN an appeal on behalf of the National Association for the Feeble-minded, signed by Sir William Chance, Sir Clifford Allbutt, Lord Avebury, and others, it is stated that the feeble-minded at present form 10 to 20 per cent. of prisoners, 62 per cent. of inmates of inebriate homes, 50 per cent. of the inmates of rescue homes, and 20 per cent. of the inmates of workhouses. There is a debt of £6,000 upon the five homes at the Princess Christian Farm Colony at Hildenborough, where feeble-minded persons of both sexes, aged from 15 and over 30 years, are housed. Twenty-four other homes are affiliated with the association. The prospect of early legislation encourages the committee of the association to appeal for funds for carrying on this work in all directions. The office is at Denison House, Vauxhall Bridge Road, S.W.

Reviews.

ANAESTHESIA AND ANAESTHETICS.

THAT eminent physiologist Professor VERWORN of Bonn has interested himself in the study of general anaesthetics and their mode of action for many years. A few months ago he read an account of his general conclusions to the New York Harveian Society,[1] and reviewed the work done by other experimentalists or theoreticians in this difficult field of research. According to one view, an anaesthetic is efficient in proportion as it is a solvent for the fats and lipoids of the body, and in especial of the brain; the exact mechanism of its action, however, cannot yet be defined. According to a second view, the general anaesthetics act as such in virtue of their influence upon the protoplasmic colloids of the cells. Professor Verworn lays stress on the fact that general anaesthesia has certain features in common with asphyxia. Anaesthetized living cells—the red blood corpuscles of birds, the liver cells of the dog, the amoeba—are proved unable to absorb or make use of oxygen supplied to them, even though their need for it has been increased above the normal by exhaustion or asphyxiation. Yet the processes of chemical disintegration continue to go on in the anaesthetized cell; catabolic changes without oxidation take place, the tissues become more and more asphyxiated, and when the anaesthesia is over this asphyxia can be abolished only by the supply of oxygen. The paralytic features of anaesthesia are simply due to the rapid cessation of oxidative changes in the tissues; the anaesthetic rapidly makes these changes impossible, however free the supply of oxygen may be, and this is its chief characteristic. But the mechanism of this inhibition remains an unsolved problem. Various hypotheses suggest themselves here, and are reviewed in turn. It might be supposed that the anaesthetic hinders the access of oxygen to the cells of the brain or body; or that it absorbs the oxygen that reaches the cells, and prevents them from employing it for their own oxidative processes; or that it acts on the cellular protoplasm in such a manner as to make it less capable of being oxidized; or that it hinders the actual access of oxygen to the oxidizable substances in the cells—it might do so by interfering with oxygen carriers or oxidases, for example, and the lipoids might be these oxygen carriers. All these are unproven hypotheses, and it is towards the last of them that Professor Verworn's mature judgement inclines. He observes that a "general" anaesthetic is really only an anaesthetic acting on the cerebral cortex, and that the cortical cells are extremely sensitive to any interference with their oxygen supply. The time-honoured comparison of general anaesthesia to sleep is wholly mistaken, as he points out. In sleep a *restitutio ad integrum* of the functions of the brain takes place, with an increased consumption of oxygen in the tired cerebral cells. In anaesthesia exactly the opposite occurs; there is no repair of wastage, oxidization is brought to a standstill. Anaesthetics and narcotics, while acting as such, do not bring with them the blessings of sleep, though sleep may often remain behind, and benefit the patient after their paralysing influence has passed off.

In an interesting pamphlet[2] Dr. KUHN brings before the medical profession another instance of German ingenuity and thoroughness in its attention to detail and experiment. For his conclusions are based upon numerous experiments upon animals, and in the application of these to surgery they have received the sanction of many of his colleagues. His method of administration of chloroform is of great interest to both general surgeons and laryngological specialists as well as to anaesthetists, to whom, if half of his promised results are obtained, it will be more than welcome. In a small book on intralaryngeal tubage, he explains his method, which he claims is best adapted to a certain class of cases. He deals first with certain physiological principles of death from asphyxia, in which he maintains that the presence of excess of CO_2 in the lungs is underestimated, and the beneficial effect of the administration of O_2 is overestimated, with the inference that the important fact

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[1] *Narkose.* Von Max Verworn, Bonn. Jena: G. Fischer. 1912. (Roy. 8vo, pp. 37; figs. 2. M.1.)

[2] *Die perorale Intubation.* Von Dr. F. Kuhn. Berlin: S. Karger. 1911. (Sup. roy., 8vo, pp. 168; Abbs. 22. M.5.)

is an open airway into the lungs, which is possible by means of his spiral tube, introduced into the mouth and extending beyond the vocal cords. Numerous experiments upon animals are adduced in support of this. Through this flexible tube chloroform, he states, can be administered with greater safety and under better conditions than by the customary methods. His idea is, in short, the administration of chloroform directly into the lungs, as is now done through a Hahn's cannula after a preliminary tracheotomy in certain oral and laryngeal operations, but without the dangers of the tracheotomy. Full directions as to the technique and sizes of instrument are given, and it is really no more difficult than the introduction of an O'Dwyer's intubation tube. He discusses fully the *pros* and *cons* of his method in the various operations upon the throat and nose—as in removal of the tongue, of tumours of the base of the skull, operations upon the upper jaw, sphenoid, palate, base of the brain, and spinal cord—claiming, and with justice, that the operation field is thereby rendered cleaner, more aseptic, and in many cases more open to inspection than under the present methods. He states that bronchial spasm resulting from the action of chloroform upon the nasal mucosa is obviated, that the anaesthetic acts more rapidly, and that therefore the patient need not be so deeply under its influence. It is claimed that the margin of safety is greater, and that a smaller quantity of chloroform is required. The danger of bleeding into the larynx is entirely obviated by careful packing around the tube, and therefore post-operative pneumonia is very much less likely to follow. The entrance to the oesophagus can also be packed. The book would be improved by more careful reference to and fuller illustrations. This method, used with discretion and in capable hands, bids fair to be almost epoch making in anaesthesia production.

The inclusion of the study of anaesthetics as part of the compulsory curriculum of dental students has induced Mr. FRANK COLEMAN and Mr. HARVEY HILLIARD to write a manual on *Anaesthetics in Dental Surgery*,[3] hoping by the collaboration of dentist and anaesthetist to make clear every practical point in the domain of each. The book begins with a short history of anaesthetics, omitting, however, the name of Joseph Hickman, to whose pioneer work on nitrous oxide attention was lately drawn in these columns. The next chapter, on the choice of anaesthetics, though short, indicates the extensive range of medical knowledge the dentist who proposes to administer even nitrous oxide should possess. In the following five chapters every form and combination of general anaesthetic is well and fully described, with the one exception of anaesthesia by intravenous injection. The various forms of apparatus are described, and the authors give sound reasons for their preferences. Ethyl chloride is accorded but a limited field of usefulness, but the authors think it has been somewhat unjustly condemned by inexpert users. In dealing with the accidents of dental anaesthesia the authors have apparently overlooked the records of cases in which teeth or stumps have passed into the air passages without producing any symptoms, immediate or on the patient's recovery from the effects of the nitrous oxide. The chapter on local analgesia gives an excellent summary of the physiological effects of the drugs used, but no account of regional anaesthesia of the jaws—the most useful to the dentist of all methods of obtaining local anaesthesia. The book is clearly written, but p. 76 shows some confusion of thought. The dental student who studies the book should be master of his subject, so far as reading can enable any one to master a practical subject, and many dentists will be inclined to recommend it to the general practitioner who comes to give gas for his patient.

PHYSIOLOGY.

SIR DAVID BRUCE, in evidence given to the Vivisection Commission, spoke of a textbook as the most contemptible form of literature, and there are examples which might seem to justify this sweeping assertion. Under the compulsion of the examination system the student reads and re-reads his textbook, and learns the bare skeleton of a science. He has no time to think out the problems; he must get through his examination; that, to him and his teachers, is the immediate end in view, and experience shows that he can be taught to give the right answers to the ordinary run of questions set without having attained to any real grasp of the science in which he is passed as proficient. The epoch-marking monographs of the great men in the history of each science are unopened and unread. The student draws no inspiration from them; as a rule, he does not even know of their existence. Dr. H. WILLOUGHBY LYLE has been impelled to write a new *Manual of Physiology*,[4] "so that the student may have a book of convenient size." Having retired from the occupation of lecturer on physiology and taken to the pursuit of ophthalmic surgery, Dr. Lyle has issued his swan's song and "endeavoured to place before the student as concisely as possible the chief facts of physiology, and with this end in view has embodied the notes of the lectures, somewhat elaborated, which during the last sixteen years he has given to the members of his class." Thus does he exactly describe the book before us—"lecture notes, somewhat elaborated." The work is one which the student may find useful just before an examination; we do not think it will stimulate his enthusiasm or give him any insight into the methods of investigation by which the science of physiology has been created. This is not a book which should be placed in the hands of the untaught student. He alone can profit from it who has been through a proper course of study and wishes to refresh his memory. For such a purpose the book is well arranged and in many of the sections the facts marshalled are well chosen and clearly stated under heavily-printed headings, which catch the eye and arrest the attention. On page 498, and again on page 536, we note printer's errors in these headings. Dr. Lyle has a singular habit of citing, as an authority for his statements, the author from whom he derived the information, who is by no means always the original investigator, but the writer of some other textbook. As an example may be mentioned a paragraph concerning the current of injury in nerve, to which the name of N. H. Alcock is appended. This leads us to the conclusion, confirmed by other internal evidence, that the substance of this book is derived from other textbooks, and represents the fruits of sixteen years' work as a teacher for examinations. Such a use of names must lead the student to an erroneous conception of the authorities in physiological science. On page 169 we note the mention of "(1) the sinu-auricular bundle (Flack)." There is no such structure known to us as a sinu-auricular bundle. Keith and Flack discovered the sinu-auricular node, and we know of no bundle connecting this with the auriculo-ventricular node. We quarrel with the expression "the function of the heart is to empty the veins and fill the arteries" (page 206); and the student may draw an entirely erroneous conclusion from the paragraph on page 209, in which it is stated that the blood pressure depends on the atmospheric pressure, and may be controlled "by enclosing an individual in a pneumatic suit into which air can be pumped." If the individual is entirely enclosed in such a suit, the blood pressure will be unaltered. On page 339, concerning respiration, we read: "Oxygen accumulates in the blood, which is consequently becoming rapidly arterial, until its tension rises to 38.5. It is obvious, therefore, that there must be another factor at work besides diffusion to account for this difference of oxygen tension." We presume Dr. Lyle means 38.5 per cent. of an atmosphere. If so, where does he get his authority for such a statement? Haldane, upholding the secretory action of the lung when there is lack of oxygen in the atmosphere, agrees that the normal process is one of diffusion. The active secretion of oxygen into the blood under any conditions is disputed by almost every other physiologist. The secretory doctrine ought not to be given to the student as a definite unquestioned fact. On page 341 the student is told that the tension of CO_2 in the venous blood is over 5 per cent., and 5 per cent. in the alveolar air of the

[3] *Anaesthetics in Dental Surgery.* By Frank Coleman, M.R.C.S., L.R.C.P., L.D.S., Assistant Dental Surgeon, St. Bartholomew's Hospital and the Royal Dental Hospital, and Harvey Hilliard, M.R.C.S., L.R.C.P., Anaesthetist to the Royal Dental Hospital, Assistant Anaesthetist to Charing Cross Hospital. London: H. K. Lewis. 1912. (Crown 8vo, pp. 310, 6 plates, and 38 figs. 7s. net.)

[4] *Manual of Physiology for Students and Practitioners.* By H. Willoughby Lyle, M.D., B.S.Lond., F.R.C.S.Eng. Oxford Medical Publications. London: Henry Frowde, and Hodder and Stoughton. 1911. (Post 8vo, pp. 762; 137 figs. 15s. net.)

lungs, and that it is by diffusion that the CO_2 leaves the venous blood and enters the air in the alveoli, and by diffusion leaves the air in the alveoli and enters the bronchioles. A few lines lower down he learns that the flattened cubical cells lining the alveoli prevent the CO_2 from diffusing back to the arterial blood, where the tension of CO_2 is only 2.8 per cent. The lack of clear physical conception here shown is unfortunate. On page 435 the author states dogmatically that the excretion of urine depends upon the capillary blood pressure in the glomeruli. He may surmise with justice that this is so, but no more, for he does not cite a single experiment which proves the assertion. On page 623 the heading, "Sensations Derived from Bone," strikes our attention. Under it there is this two-line paragraph: "This is called vibration sense, and is usually tested by means of a tuning-fork." We wonder what a student fresh to physiology would make of this statement. The best sections in the book are those which deal with the chemistry and metabolism of the body. In these the material and arrangement are both good.

Dr. EMIL ABDERHALDEN, one of the most prolific writers on the Continent, has added to his other publications a textbook of practical physiology.[5] The chemical part is naturally dealt with in the greatest detail, but with a curious want of balance in contrast with English books on the same subject. Thus thirty pages are devoted to Dr. Abderhalden's own particular subject, the amino-acids and their synthesis and that of the polypeptides, while only nine pages are devoted to the urine, three to bile, and two to milk. Methods of estimating ammonia in the urine, also of demonstrating phenol and preparing hippuric acid are given, but no quantitative methods of estimating urea, uric acid, or of demonstrating the chlorides, sulphates, or phosphates. The experimental part contains the usual exercises on muscle and nerve, viscera, etc. The book is very well illustrated with diagrams showing all the chief physical and chemical methods.

The seventh edition of HAMMARSTEN'S well-known *Textbook of Physiological Chemistry*[6] has been translated by Dr. JOHN MANDEL, who is professor of chemistry in the New York University. The edition contains a new chapter on physical chemistry in biology by Professor S. C. Hedin of Upsala, and all the other chapters have been revised and rewritten by Professor Hammarsten. As the result, and thanks to the translator, we have in the English language a textbook of advanced physiological chemistry which is of very great value, giving us, as it does, the latest developments of the science. We find the introductory chapters particularly interesting; therein Hammarsten deals with such subjects as the formation of formaldehyde in the photolytic decomposition of moist carbonic acid by chlorophyll and the possible formation of sugar by condensation of the aldehyde groups and the production of heat by plant organisms. In a few of the higher plants—as the Aroideae when bearing fruit—a considerable development of heat has been observed.

> The contrast which seemingly exists between animals and plants consists merely in that in the animal organism the processes of oxidation and splitting are predominant, while in the plant chiefly those of reduction and synthesis have thus far been studied.

The contrast between a tiger and a tree would seem to a man who takes refuge therein a little more than that! The discussion of the various theories of animal oxidations engages the attention of the reader. Loew maintains that

> the instability of the active protein molecule is due to the simultaneous presence of aldehyde and unstable amine groups. These occur separated from each other in the active proteins, and when they combine the protoplasm dies, the molecule being changed into a stable condition.

If we suppose the living protoplasmic protein is not, like protein in the ordinary sense, indifferent to neutral oxygen, it may bring about a cleavage of the oxygen molecule, and a secondary oxidation of other "difficultly oxidizable substance" will result from the oxygen atoms thus set free. The translator unfortunately uses a slipshod style, and is not happy in such expressions as "difficultly oxidizable substances," although his meaning is clear enough. Hammarsten points out that the ordinary methods of chemical analysis following incineration are wholly insufficient for the study of the mineral constituents of the fluids or tissues of the body. Modern physico-chemical methods must be employed, and the results of such inquiry show that apart from the importance of the mineral bodies in regard to the osmotic tension, the part taken by them in cell life is essentially dependent upon the action of the ions. A physiologically balanced salt mixture, suitable for normal functions, may be produced by the antagonism of the ion action in a complex colloidal solution. Changes in one or other direction among the ions must determine changes in the colloid. For example, the flocking out of precipitates by ions which have an opposite charge to the colloid particles. Professor Hedin deals with these important physico-chemical matters in a suggestive way. Turning to quite another subject—the metabolism of uric acid—we read that:

> the endogenous uric acid elimination is not higher in chronic gout, but rather lower than normally, and gout is more probably characterized by a diminished enzymotic formation of uric acid as well as by a decreased enzymotic destruction of uric acid. This last moment is the cause for the appearance of uric acid in the blood and its accumulation in certain tissues.

We wonder when the vendors of proprietary drugs will begin to realize that uric acid is not regarded as a chief sinner but a much maligned and innocent excretory product of metabolism by the leading physiological chemists of the day. In the respiratory chapter we are surprised to find no mention of Haldane's simple method of obtaining the pulmonary alveolar air. On page 105 the heading "Animo-acids," in place of "amino," looks curious. An excellent bibliography is given, and author and subject indices, which greatly increase the value of the work.

[5] *Physiologisches Praktikum.* Von Prof. Dr. E. Abderhalden. Berlin: J. Springer. 1912. (Roy. 8vo, pp. 295. M.10; Geb. M.10.80.)

[6] *A Textbook of Physiological Chemistry.* By Professor Olof Hammarsten. Authorized translation from the author's enlarged and revised seventh German edition by John A. Mandel, Sc.D. Sixth edition. New York: John Wiley and Sons: London: Chapman and Hall, Ltd. 1911. (Roy. 8vo, pp. 972.)

NATIONAL INSURANCE.

THERE can hardly be better testimony to the complexity and far-reaching effects of the National Insurance Act than the fact that so many books aiming at explaining its purport and relations have already been published. Additional testimony of the same kind is furnished by the fact that at least one of them has reached a second edition in a few short months. The first edition of *National Insurance*,[7] by Messrs. A. S. COMYNS CARR, W. H. STUART GARNETT, and Dr. J. H. TAYLOR, of Salford, was published last February, and now a second and revised edition has been necessitated by the fact that in the intervening months new regulations and other documents throwing light on the administration and working of the Act have been issued by the various departments concerned therewith. Furthermore, continued discussion of the Act in all, and especially its medical, relations has thrown into relief certain points and suggested to the authors modifications or amplifications of their original comments. The result is that this new edition is considerably more bulky than its predecessor, though its general form and arrangement remain unchanged. Though all three parts of the volume contribute, the greater part of the increase is due to additions to the chapters in which an endeavour is made to show how the various clauses must be interpreted unless there is to be a departure from precedents established either by previous legislation or by case law.

The first part of the volume—that which serves as a general commentary on the whole Act, including its effect on the medical profession and the public health—has been increased by some nine or ten pages In this part the pooling arrangement, advocated in some quarters as the best way of administering medical benefit, because it would enable payment to be made per attendance instead of per head, is now considered. This pooling, if coupled with an arrangement by which the insured would have to meet any deficit created by the calls on the pools being greater than the amount in hand, would, it is suggested, have the advantage of inducing the insured to restrict their demands for attendance for the same reason as do private

[7] *National Insurance.* By A. S. Comyns Carr, W. H. Stuart Garnett, Barrister-at-Law, and J. H. Taylor, M.A., M.B., Ch.B. With a preface by the Right Hon. D. Lloyd George, M.P. London: Macmillan and Co., Ltd. 1912. (Med. 8vo, pp. 587. 7s. 6d. net.)

patients. It is argued, also, that it would have the advantage of obviating the objections to contract practice entertained by a large proportion of the profession, but it would need to be worked out carefully to avoid hardship, especially to chronic invalids, who would complain that they were not getting a full insurance.

The demand formulated by the British Medical Association on behalf of the medical profession for a payment of not less than 8s. 6d. a head is also considered, the statement being made that to satisfy this demand the total sum which would have to be set aside by the Commissioners to meet the cost of medical benefit, including medicines, appliances, and extras such as night visits, mileage, anaesthetics, and consultations, would certainly be not less than 10s. 6d. per insured person, and probably 11s. 6d. would ultimately be nearer the mark. This, it is said, could be found either by an increase in the contributions, or a lowering of other benefits, or an extra grant from the Treasury. Other demands made by the Association in respect of the formation of panels, free choice of doctors, and other like matters, are also considered, and the opinion expressed that considerable delay may occur before any satisfactory arrangements are concluded. Nevertheless, the time will, it is thought, be well spent if the result is a contented profession and the establishment of a satisfactory domiciliary medical service for the insured.

On the other hand, the position of the Commissioners in dealing with what "is not quite correctly called the strike of doctors" is described as extremely powerful. By way, seemingly, of exemplying this fact it is suggested that among other things the Commissioners could throw any trouble in the matter off their own shoulders by placing it on those of the friendly societies. These are represented as being very ready and willing to take up the gauntlet, confident in their previous success in managing the profession; and their belief that the latter when it comes to the point will probably see that it will be in a better position if it relies on the fairness and justice of its demands, supported by all the protecting clauses of the Act, rather than on a "suicidal strike policy."

A section, much of which is new, deals with the various questions arising out of the sanatorium benefit clauses. The suggestion throughout is that if due effect is given to the intentions of Parliament, tuberculosis treatment of every kind will be placed in the hands of specialists, and that this will lessen the task of the ordinary medical attendants of insured persons, but at the same time may thus give rise to disputes as to the responsibility of any given medical man for an insured person who, so far as the nature of his illness is concerned, is entitled to sanatorium benefit. In the financial section reasons are adduced for holding that approved societies may find themselves during the first few years of the operation of the Act in possession of considerable surpluses, but since this state of affairs is likely to be transient, distribution of such funds might prove hazardous. Elsewhere the model rules for approved societies and other like matter have been carefully collated with the Act, while the index contains a considerable number of additional entries. The authors of the volume, therefore, may be regarded as having brought their work as thoroughly up to date as can be expected of them, for they are dealing not with a finite measure, but with a kind of Burghley's nod which the Commissioners can interpret practically how and when they please.

NOTES ON BOOKS.

ON the task of compiling *The Law Relating to Medical Practitioners and Dentists*,[1] Mr. J. N. MORTON has brought to bear his knowledge as a solicitor and his experience as secretary of the Western Medical School of Glasgow, and the result is a very clearly worded volume. The method pursued is first to set forth the general effect of the law on any given point—a reference being usually supplied to the Act in question—and then to quote any case in the courts by which such law has been extended or modified. Taken as a whole, the volume supplies medical practitioners with a good idea of their general position in the eye of the law, and thus should be of much service to many of them. It would not of course solve all problems which might arise, for the relationships between medical practice and public and private life are so complex that a complete guide-book on the legal problems arising in the course of practice would be a very voluminous one.

Mr. H. DE CARLE WOODCOCK'S book on *The Doctor and the People*[2] is opportune, and brings to the subject a freshness of idea and virility of treatment at once attention holding and thought compelling. The book is a robust *confessio medici* by an observant man who, with a mind and pen which scorn the conventional, plunges into the essence of things, and holds up the pains and pleasures, the cares and responsibilities of a doctor's life in their true bearings. The consultant and the general practitioner, the hospital and the specialist, medical training, contract practice, the organization of the profession, the power of revolt, the Midwives Act, the Poor Law doctor, public health work, tuberculosis and its treatment, post-graduate work, with graphic sketches of well-known teachers and the doctor in literature, all are dealt with. Asylums, instead of being worked on highly scientific lines, he says, are, "with a few brilliant exceptions, prisons with overworked medical warders." Of medical legislative measures, he says, "the peers may confirm them, and the King give his assent to them; but without our assistance all such legislation is useless. If only a great and universal impulse passed through our ranks, bidding us act as one man, a battle between the doctors and the politicians would be the shortest ever fought." We can cordially commend this strong, sensible, well-written book.

Though the International Conference on Pneumonic Plague[3] held in Manchuria last year came to an abrupt end, it managed to get through a good deal of work of a scientific kind, and of this a full report has now been produced by the Bureau of Science of the Government of the Philippine Islands. This bureau was asked to undertake the task by the Chinese Government, and its biological chief, Dr. R. P. Strong, with the assistance of three colleagues, Drs. Martini, Petrie, and Stanley, has performed it very effectively. It was an undertaking of no small difficulty, for, apart from the necessity of redrawing all the diagrams and charts presented to the conference, and the fact that thereat three languages were employed, the bacteriological evidence was not complete, and further experiments had to be performed. Some of these which related to the susceptibility of dogs and donkeys to pneumonic plague, and to the efficacy of vaccination against the same type of plague, were carried out at the special request of the conference by Dr. Strong and Dr. Teague, and the results are included in this volume. An appendix contains a number of charts and plates, some of them in colours.

During the recent uprising in China to destroy the Manchu dynasty there was much anxiety for the safety of Europeans within the danger zone of the rising. That the dangers were imminent is well shown in Mr. ERNEST F. BORST-SMITH'S plain, unvarnished narrative, *Caught in the Chinese Revolution*.[4] Engineered by the revolutionary "Society of Elder Brethren," the storm broke fiercely in Shensi, where the Baptist Missionary Society has a station, and although the decree went forth, "protect the foreigners," they were for a considerable time in danger. Houses were attacked, the wife and five children of a Swedish missionary were slaughtered, and another missionary and his wife left for dead in the road. Of the perils and trials of the mission workers, of their flight from danger, of the courageous rescuers who came to meet them, of their adventures in the wake of a conquering and in the path of a retreating army, of how a battle was postponed till they had passed through the lines, all these things are set down with a simple directness which carries conviction.

The latest volume of *The Transactions of the American Laryngological Association*[5] relates to the proceedings of

[1] *The Law Relating to Medical Practitioners and Dentists in Great Britain*. By J. N. Morton, M.A., Solicitor, Secretary of the Western Medical School, Glasgow. With an Appendix of Statutes. London and Edinburgh: William Green and Sons. 1912. (Med. 8vo, pp. 148. Price 7s. 6d.)

[2] *The Doctor and the People*. By H. de Carle Woodcock. London: Methuen. 1912. (Crown 8vo, pp. 312. 6s. net.)

[3] *Report of the International Plague Conference*, held at Mukden, April, 1911. Issued by the Bureau of Science, Manila. (Sup. roy. 8vo, pp. 500, plates 18. Price unbound 2.50 dols.; bound, cloth, 3.50 dols.)

[4] *Caught in the Chinese Revolution*. A Record of Risks and Rescue. By Ernest F. Borst-Smith. London and Leipzig: T. Fisher Unwin. 1912. (Cr. 8vo, pp. 125, 21 illustrations and 2 maps. 2s. 6d. net.)

[5] *Transactions of the Thirty-third Annual Meeting of the American Laryngological Association*, held at Philadelphia, Pa. New York: Published by the Association. 1911. (Roy. 8vo, pp. 329.)

this society at its thirty-third annual meeting a year ago. It includes some thirty-one papers, many well illustrated, and some of general as well as specialist interest. Among these may be mentioned Dr. L. B. Lockard's exposition of the reasons for regarding epiglottidectomy as the rational treatment of cases of tuberculosis of the epiglottis when sufficiently advanced to cause dysphagia; a review of the question, Are the tonsils a menace or a protection? by Dr. L. Swain; and Dr. G. C. Stout's paper setting forth the comparative frequency with which the initial lesion of syphilis occurs in the larynx.

EPIDEMIC PNEUMONIA.

Dr. Martin Ashley has presented to the Gloucester Rural District Council and the Local Government Board the following report on four cases of epidemic pneumonia, which occurred recently in a village in the district:

On May 20th, 1912, having received a complaint of the insanitary and dirty condition of a house, I visited the house and found that the death had that day occurred of one of the inmates, a woman aged 42 years, from pneumonia. On making further inquiries I found that three of the woman's children, aged 14, 10, and 5 respectively, had suffered from the same disease, one of whom at that time was still very ill. The details of the previous cases have been kindly supplied by Dr. St. Johnstone, who was in attendance, and Dr. Hopps, the house-physician at the Royal Infirmary, Gloucester.

The first case, Wallace, aged 10, was visited on February 11th, and found to be suffering from acute lobar pneumonia; pleurisy developed almost immediately, and the boy was sent to the infirmary on February 15th. His temperature was then 102°, and on the following day he was operated on, and the fluid drawn off. As a result, the temperature gradually came down, so that on February 22nd it was 99°. The temperature now oscillated between 99° and 100° until April 2nd, when it gradually rose, until on April 7th it stood at 102°, and remained at that height until April 9th, when a further operation was performed, a portion of the rib resected, and the pus which had now collected, drawn off. As a result of this operation, the temperature came down to normal within twenty-four hours, and the boy made satisfactory progress, until his discharge on May 2nd. No bacteriological examination was made of the expectoration or pus, but the smell of the latter was very strongly suggestive of *B. coli*. The respirations in this case fluctuated between 45 and 60 during the illness, and the pulse-rate between 130 and 145.

On May 6th Harold, aged 5, was found to be suffering from pneumonia, and on May 7th he was removed to the infirmary, when his temperature on admission was 104°. On May 9th the temperature came to normal by crisis, and from that date he made an uninterrupted recovery.

On May 9th George, aged 14, was found to be suffering from pneumonia, which extended within a few days to both lungs. The disease terminated by crisis, and the boy went on well. This case was treated at home.

On May 14th Hannah, aged 42 (the mother), developed pneumonia, after suffering for two days with sickness and diarrhoea; both lungs rapidly became involved, and the patient died on May 19th.

Two inmates of the house, the father and one child, escaped the disease.

As the first case was discharged from the infirmary on May 2nd, and pneumonia was diagnosed in the second case on May 6th, the incubation period in the second case was evidently not more than four days, and probably less, as the termination of the second illness occurred by crisis on May 9th. The incubation periods of the third and fourth cases were uncertain, as it is impossible to say whether they did not contract the disease from the first boy, who was discharged from the infirmary on May 2nd.

The occurrence of sickness and diarrhoea, the short incubation period, and the complication of empyema are features which have been before recognized in connexion with epidemic pneumonia. A fatal termination on the fifth day of the disease is also not uncommon. The absence of marked prostration or cerebral symptoms is opposed to the usual record of such cases.

As regards the cause of this sequence of pneumonia in one house, there is very little doubt that the immediate cause was an infecting organism, fostered by insanitary surroundings. The house was extremely dirty although not overcrowded. The water was derived from a shallow well, which was insufficiently protected from the surface contamination of the garden on which was emptied the contents of the bucket closets. An inmate of the adjoining house had been in the habit of purchasing fish for the purpose of feeding pigs, and possibly the resulting offal contaminated the well, the water from which was used by the inmates of both houses. Twenty pigs were kept on the adjoining premises, although probably too far away from the houses to affect the water supply, yet sufficiently near to be a nuisance and dangerous to health.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

The "British Pharmacopoeia."

Dr. Nestor Tirard, the medical editor of the *British Pharmacopoeia*, attended to explain certain answers given by him at a previous sitting.[1] He stated that although long intervals sometimes occurred between the issues of the *Pharmacopoeia* the knowledge at the disposal of the compilers was not kept back, as a question put to him seemed to imply. It was issued in the shape of reports, which were placed on sale and supplied to medical and pharmaceutical journals. The section of the public to whom the reports were most useful were the druggists. With regard to his answer concerning the analysis of new drugs, the witness stated that the General Medical Council wished to see established a Government laboratory for the standardization of drugs which it was found difficult to standardize by the usual physical methods. There were certain tests involving vivisection which chemists could not be expected to perform. The Government laboratory they asked for would also be concerned with the standardization of the various serums and vaccines introduced. It was difficult to put into the *Pharmacopoeia* any test which the average chemist would not be able to perform himself. On the other hand, the Council would strongly oppose the publication of any official book which might attempt to supersede the *Pharmacopoeia*.

In reply to Dr. Lynch, the witness said he was personally of the opinion that the *Pharmacopoeia* should be produced at more frequent intervals; a book containing criticisms and inviting suggestions was issued, however, every two years. Dr. Tirard reasserted his view that every bottle of medicine should have upon it a label indicating the amount of the scheduled poisons contained in the composition. He also associated himself—although he feared it was a counsel of perfection—with the Royal College of Physicians in its desire that exaggerated claims on behalf of remedies should not be permitted. The Royal College recommended that no statement of the disease or symptoms that the substance claimed to cure should be put on the label. Of course such a step would kill the quack medicine trade entirely.

Replying to Dr. Chapple, Dr. Tirard said the proper laboratory for ascertaining the medical value of drugs was the hospital. The out-patient department was absolutely useless for this purpose. Reliable knowledge of the medicinal value of drugs came from the medical profession alone. It was utterly opposed to the traditions of the profession for a medical man who made a discovery concerning the medical value of any drug to claim the exclusive right to sell it to the public. As he had said on the previous occasion, the compilers of the *Pharmacopoeia* were greatly indebted to pharmacists and to the Pharmaceutical Society for assistance in many directions.

Dr. Chapple: And yet a layman can claim the exclusive right to sell such a thing, although he has had no part in the discovery?

Dr. Tirard: More than that, he can go to a consultant and get a prescription which he can patent.

Is it not a very remarkable thing that the State should allow this?—Yes; I feel most strongly on the point.

The witness, in answer to further questions by Dr. Chapple, said it was possible for a sufferer to derive advantage from newspaper advice on medical matters, but it was unsound and unsafe. It put on the sufferer the whole burden of diagnosing his own complaint, and it was almost impossible for him to do this should he be seriously ill.

In reply to the Chairman the witness said the *Pharmacopoeia* had a circulation of about 2,000 copies per annum. Some 20,000 to 23,000 copies were usually sold in the first year. The present issue had had a circulation of about 40,000.

Replying to Mr. Newton, the witness said the insertion in the *Pharmacopoeia* of formulas analogous to those of

[1] British Medical Journal, May 25th, 1912, p. 1192.

newly introduced drugs involved no question of rivalry, and he deprecated strongly any such suggestion. The only advantage was derived by the public.

THE BRITISH MEDICAL ASSOCIATION.

Dr. Alfred Cox, Medical Secretary of the British Medical Association, attended to give evidence on behalf of the Association. At the outset he asked the Chairman whether evidence put before the Committee was strictly privileged. His reason for asking was that some of the things he and others would have to say might be libellous. He would like a definite assurance.

The Chairman: I anticipated your question, and in view of the importance of the matter and the grave responsibility attaching to the anwer, I have consulted the Speaker of the House of Commons as to the question of the privileged character of the evidence given before this Committee and of the documents handed in by witnesses. I have to say, with Mr. Speaker's authority, that evidence given and documents handed in by witnesses are privileged in the sense that if a witness were to be cited before any court of law for any statement he might make, or furnish, or which is printed in the official report of the proceedings, that citation would be a breach of the privileges of the House of Commons, and the House would protect him. But if a witness before a Committee makes a false statement, he is liable to be punished by the House of Commons, and, if a false statement is made on oath and wilfully, he is also liable to penalties under the Perjury Act, 1911.

Dr. Cox: That is quite satisfactory.

Witness then read a memorandum of evidence on behalf of the British Medical Association.

LITERARY NOTES.

MR. DOOLEY complains that there is too much literary matter in the magazines. He says:

Th' fellow that runs thim magazines must be growin' rich out iv th' potes an' novelists. But I think they're goin' too far in their greed f'r gold. There must be a limit to their avarice. I don't object, mind ye, to their makin' a fair profit out iv their business iv idjacatin' people where to get th' best breakfust food or th' most sparklin' hair dye * * * That's all right. But what I object to is whin I pay ten or fifteen cents f'r a magazine expectin' to spend me avenin' improvin' me mind with th' latest thoughts in advertisin', to find more thin a quarter iv th' book devoted to lithrachoor.

This, of course, is like Falstaff's one half-pennyworth of bread to the intolerable deal of sack. And Mr. Dooley fears there may be a further decrease in the "bread."

Th' first thing ye know there won't be as many pages iv advertisin' as there is iv lithrachoor. Then people will stop readin' magazines. A man don't want to dodge around through almost impenthrable pomes an' reform articles to find a pair iv suspinders or a shavin' soap.

Therefore, Mr. Dooley thinks the magazines ought to be compelled to mark all their literature plainly, so that the reader cannot be deceived. There are, he admits, magazines which keep literature in its proper bounds. It is not allowed to encroach on the advertising space. The proper proportion between them is, we gather, eight pages of advertising to one of literature. Mr. Dooley admits that this is not bad, but he hopes the time will come when there will arise some publisher bold enough to issue a magazine entirely devoted to advertising. There are some magazines in this fossilized old country which come very near Mr. Dooley's ideal.

Autolycus writes:

Please excuse the following remarks apropos the pronunciation of "idea" referred to in the Literary Notes in the JOURNAL of June 8th. To Englishmen the phonetic spelling "idēer" represents very fairly the pronunciation used by them, because they do not roll the final "r" of a word taken by itself or at the end of a clause or sentence, but give to it an indefinite vowel sound or vanish. When the final "a" of one word immediately precedes another word beginning with a vowel or silent "h," many Englishmen, even educated ones, interpolate a slightly rolled "r," thus, "idea-r-of it." The same with "peninsula," "India," etc. This of course is a blemish.

To Scotchmen and Irishmen, who always more or less roll their "r's," even before consonants, "idēer" is a sheer barbarism.

If one aims at being "syllabic" I suppose that "ideah," "Judaeah," etc., would be the correct phonetics; but as such a pronunciation would sound pedantic or prolonged, neutral sound or vanish is conventionally used for the last syllable. Would not "idēuh" be a better phonetic representative than "idēer"? Scotchmen and Irishmen would be saved a shock if such were used, though Englishmen would probably say "'Idēer' is good enough for us."

Our correspondent has, it seems to us, somewhat missed the point. It is not "idēer" that is given in the *Concise English Dictionary*, but "idēēr," making the word a disyllable. Such the authors contend the word is now "in actual use." We have no particular quarrel with "idēah," but "idee," which is what the pronunciation indicated comes to, seems to us not merely illiterate but vulgar. There is no question as to the interpolation of the letter "r" before another word beginning with a vowel. This the authors of the *Concise Oxford Dictionary*, in common with all Englishmen of any education, expressly disavow.

To the *Canadian Practitioner and Review* for May Dr. John Stewart of Halifax, Nova Scotia, contributes some interesting personal recollections of Lord Lister. He accompanied the great surgeon to London on his appointment to the Chair of Clinical Surgery in King's College Hospital. The beginning of his London career would have disheartened a man less confident in his cause. Dr. Stewart says:

On October 26th (1877) Lister operated for fracture of the patella, and this occasioned much comment, for it was a very daring thing to do—at that time. And this is what one of the brightest ornaments of London surgery said when he heard of it, said it to his students, too: "Now, when this poor fellow dies, it is proper that some one should proceed against *that man* for malpraxis!" And a few days later we admitted a young man who had been discharged from one of the leading hospitals as inoperable. He had a large tumour of the upper end of the femur, and it was supposed he had metastasis in the lungs. Neither Cheyne nor I could find evidence of this, but hospital etiquette required to have the medical examination made by one of the medical staff. This gentleman shook his head and looked more than dubious. I think he really did not wish Mr. Lister to tackle so doubtful-looking a case. I have my doubts if Mr. Cheyne communicated these forebodings to the Chief. At any rate the limb was removed at the hip-joint, not by any showy flap method, but by a careful dissection (Furneaux Jordan's method), and with most satisfactory results. And I think it was when this case was dressed at the clinic a few days later, and members of the hospital staff and students came into the ward and saw a comfortable and happy patient, with no rise of temperature and a normal pulse, reading the morning paper, and then saw the dressings removed and the large wound with no trace of inflammation and no pus, that their eyes were opened to the wonder of it all. At any rate, next day Mr. Wood asked Mr. Lister to be with him and supervise the antiseptic precautions while he removed a goître. Wood was a masterly operator, but I suppose this was the first operation of the kind he had ever done in which the wound healed without any suppuration. It was a very pleasant thing to see how our dear Chief won the hearts of all who came into contact with him. Having mentioned Mr. Wood, I may refer to another case. Ovariotomy at that time was, taking the average statistics, one of the most fatal operations. Experience at King's had been so disastrous that the Governors had forbidden the staff to undertake it. But the impression made by Lister's cases led to a reconsideration of this rule, and special leave was given to Mr. Wood to undertake a case. Well do I remember the day. The patient had a small ward to herself. A carbolic spray had been kept going in it for hours, all night, I think; the atmosphere reeked with carbolic acid; the disciples, as is so often the case, thinking to improve on the master. I was present. The little ward was full of surgeons, many more than the staff of King's. Amid breathless silence, and in a veritable Scotch mist of carbolic vapour, John Wood advanced with an air of stern resolve. The incision was made, the cyst exposed, the trocar plunged in. In a few minutes the operation was over, so everyday a matter now. But men were as much impressed as we to-day are in presence of the gravest complication. Was she to die like the rest? She was never even ill. She made a good recovery, and there was no prouder man in London than John Wood.

Dr. Stewart records his impressions of Lister as a surgeon and a teacher. He says:

It was said by some that he was not a good operator. Well, what is meant by a good operator? Operating is the smallest part of surgery. It is by the results we judge. Up to Lister's time no man had had such brilliant results. I think if we were the patients we should prefer a careful, painstaking, thoroughgoing surgeon to any one with ambitions for a spectacular exhibition to the gallery. There were men who could amputate a breast with two strokes of the knife, and leave the wound to

granulate. Lister might spend more than an hour, carefully removing it, clearing out the axilla, and bringing the edges of the incisions together. There is no one who hesitates as to who was doing the best operation. But I should be sorry to convey the impression that Lister was inexpert or hesitating in his manner. Where there was need for speed he was not lacking in this accomplishment of the surgeon. And all who are familiar with his plastic operations must have admired these. The bold, swift, unerring strokes of his incisions, the perfect apposition of the flaps, the provision against tension, gave him better results than I have ever seen elsewhere. In one thing more Lister was a truly great surgeon—he was of infinite resource. No unlooked-for accident, no complication found him unready. He was pathologist as well as surgeon. And yet one thing more. There is no man who remembers Lister's hospital work who was not impressed by his humane spirit, his tender regard for the mental and physical suffering of the poor who came under his care.

Speaking of his former chief as a teacher, Dr. Stewart says:

As a teacher Lister was peerless. His earnestness, enthusiasm, and energy were contagious, and inspired "such love and faith as failure cannot quell." He made it his business to define and expound principles. His teaching at the bedside was invariably interesting and practical, and it had then all the novelty of a new-found world. His lectures were models of English speech in clearness and simplicity, and the musical voice in which he spoke made them a delight. Through all his teaching there ran a golden thread of high moral earnestness. I find in my journals occasional quotations which illustrate this attitude of his mind. Here is one: "To intrude an unskilled hand to such a piece of Divine mechanism as the human body is indeed a fearful responsibility." And the practical bent of his mind is shown in this: "Act upon thoughts as they come and strike the iron while hot. If I have ever done anything it has been by acting upon thoughts as they occurred to me."

SCIENCE NOTES.

SYNTHETIC rubber has been known as a laboratory product for some years. In 1906 Professor Wyndham Dunstan, in his address to the British Association, dealt with the transformation of the hydrocarbon isoprene by polymerisation when in contact with certain substances into rubber possessing, it was said, all the properties of the natural substance. Isoprene was obtained from oil of turpentine, and the high cost of the oil put the method as a commercial process out of court. But isoprene can also be made from butyl alcohol, which can be obtained from starch by fermentation. The subject has been investigated for some time past from the commercial point of view by chemists both in Germany and England, and much interest has been excited by a paper read by Dr. W. H. Perkin, Professor of Chemistry in the University of Manchester, before the London section of the Society of Chemical Industry last Monday. He described the process of making synthetic rubber which he said would probably yield a profit at a price of half a crown a pound and might possibly be carried out at a cost of a shilling a pound. The initial step in the process would appear to be the production of butyl alcohol by fermentation. The butylic ferment is held to be *granulobacter butylicum*. It would appear that the practical application of this knowledge had been carefully studied by M. Fernbach at the Pasteur Institute in Paris; the product is purified by fractional distillation and by treatment with chlorine converted into a product which when heated yields iosprene. Rather less than a year ago Dr. F. E. Matthews and Professor Carl Harries, of Kiel, both independently ascertained that isoprene left for a considerable time in contact with sodium was converted into solid rubber. It would appear that Professor Harries was the first to publish his results, but Dr. Matthews the first to make the observation. The action is of the catalytic order, and appears to be continuous. There are also other methods known of bringing about this change in the constitution of isoprene. What the future of the process will be of course remains to be proved; it is said that rubber is now obtained from the tree on many plantations at a cost of less than one shilling a pound, and that it is probable that as experience increases improvements will result in a still further reduction in the cost of the new product.

In a paper communicated to the Royal Society by Professor Rutherford, on June 13th, Mr. H. G. Moseley, Lecturer on Physics in the University of Manchester, reported that he had determined the number of beta particles emitted at the disintegration of each atom of radium by measuring the current carried *in vacuo* by the radiation from a known quantity of active material. It is found that one atom of radium B and an atom of radium C together emit 2.20 beta particles on an average; that an atom of radium B emits the same number of particles as an atom of radium C, and that an atom of radium E appears to emit less than one beta particle. From measurements of the ionization produced by active deposit of radium emitting a measured number of beta particles, the number of ions produced by a beta particle per c.cm. of path in air has been calculated. Using the data of Geiger and Kovarik for the ionizing power of the beta radiation from a radio-active atom, the number of beta particles emitted by an atom of uranium X, actinium D and thorium D had been calculated. From measurements of the number of secondary beta particles produced by the gamma rays, it has been deduced on certain assumptions that an atom of radium C emits two gamma rays. A secondary radiation is set free in surfaces traversed by beta rays. This radiation closely resembles the delta rays, but does not leave the surface unless assisted by an electric field.

At the last scientific meeting of the Zoological Society for the present year several interesting communications were made. Chief amongst these was an appeal by Mr. Mead Waldo, Vice-President of the Society, on behalf of the rarer animals of this country. He pointed out that, as zoologists and students of animal life, it ought to be our first duty to preserve our native creatures so far as consonant with practical utility. He instanced several cases of beautiful and interesting mammals and birds which are practically on the verge of extinction. Some of those are going to their doom as martyrs to commerce; others are being exterminated by ill-considered destruction. Various suggestions were put forward towards remedying this undesirable state of matters. The law, a great help in such circumstances, is quite adequate as it stands at present; there has, however, been a lamentable failure on the part of the authorities in carrying it out. The speaker made an appeal to public opinion, and more especially to landowners, for a more strict observance of the law. Several members endorsed Mr. Mead Waldo's remarks, and mentioned various factors which called for improvement or remedy. Amongst a number of other papers having a more or less technical interest, Dr. Nicoll gave an account of the parasitic worms which had been collected from the animals dying in the Gardens during the past eighteen months. He referred to the able work which has been done by the prosectorial department in acquiring information concerning these parasites and to the value which such work possesses both from a zoological and economic point of view. He maintained that the labour expended in this direction had been more than amply justified by the large number of new and important facts brought to light, and by the valuable scientific contributions published dealing with those. He mentioned that during the period 180 animals had been found to be infected with worms, the majority of which were nematodes. In view of the fact, however, that all the animals which died could not be thoroughly examined, he expressed the belief that the actual number of infected animals was in reality very much greater. We may add that it seems to be an established fact that animals in captivity tend to lose their intestinal parasites after a certain period. Cases have been noticed, however, at the Zoo when the introduction of a particular infected animal or animals has caused a widespread infection amongst its comrades. These observations are of some interest, and lend support to Dr. Nicoll's remarks on the value of these investigations.

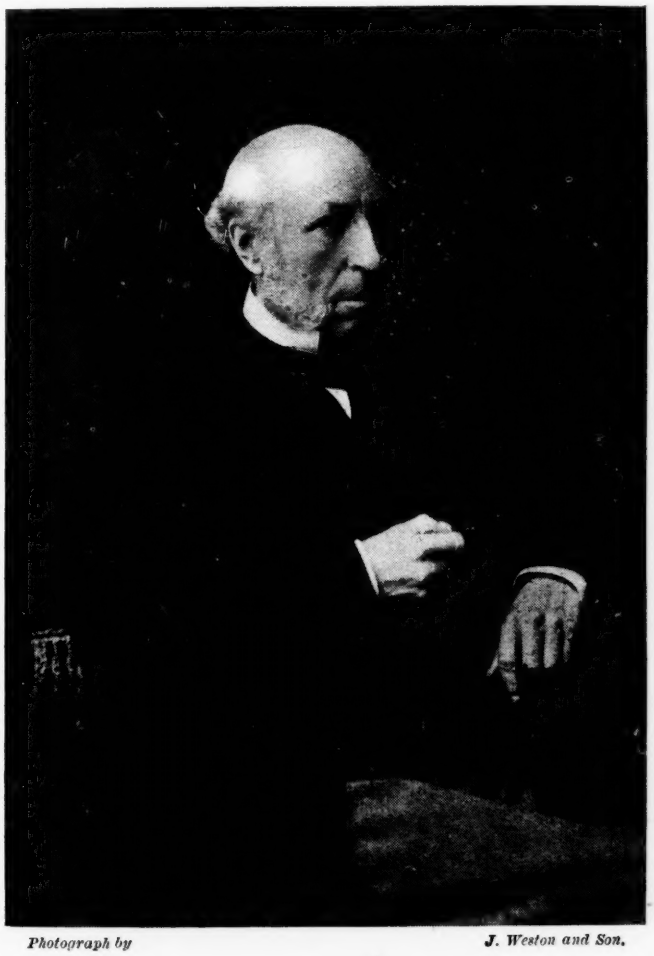
THE Great Eastern Railway Company has issued a pamphlet relating to the Moselle district of Germany, and showing by photographs how beautiful is the scenery along this comparatively little known river. Copies can be obtained by sending a postcard to the Continental Manager, G.E.R., Liverpool Street Station, E.C.

Obituary.

ALDERMAN THOMAS HOUGHTON WATERS,
M.D.ST.AND., F.R.C.P.LOND.,

CONSULTING PHYSICIAN TO THE ROYAL INFIRMARY, LIVERPOOL; EX-PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION.

THE late Dr. Waters was born at Northampton on June 5th, 1826. His early education he received at Northampton, afterwards at the Collegiate School at Leicester, from which he passed to a school at Lille in France, where he gained a good colloquial knowledge of French and acquired a taste for classical French literature. Whilst there he made a short tour to Belgium with his head master and some of his schoolfellows, and acquired a delight in foreign travel which clung to him until advanced age, and from which during his holidays from professional work he derived some of the greatest pleasures of his life.



Photograph by *J. Weston and Son.*

In 1848 he began the study of medicine, and became a pupil of Mr. Howlett, who lived in Cambridge Terrace, London. He entered Mr. Lane's School of Anatomy and Medicine and St. George's Hospital. Famous among his teachers were Caesar Hawkins, Edwin Lankester, Sibson, R. Nairn, Bence Jones, and Prescott Hewitt. He worked steadily, and allowed nothing to interfere with his one great object—namely, to acquire a good knowledge of his profession. He gained prizes in nearly every subject of the curriculum, and it is worth noting that he gained a clinical prize in diseases of the chest. The only subject in connexion with his medical studies to which he admitted he did not take kindly was botany. In 1852 he obtained the diploma of M.R.C.S.Eng., the examination for which only lasted an hour, and was entirely *viva voce*. In the autumn of the same year he was appointed Demonstrator of Anatomy in Mr. Lane's school.

In January, 1853, on the recommendation of Mr. Lane, he was offered, and accepted, a lectureship in sanitary science and physiology under the auspices of the Manchester and Salford Sanitary Association. Although his connexion with Manchester only lasted a comparatively short time, he always looked back upon it with extreme satisfaction and pleasure, for during this period he met with much kindness, and formed friendships with medical men and others which became permanent. In August, 1853, he obtained the diploma of Licentiate of the Society of Apothecaries.

His election to the office of Senior House-Surgeon of the Liverpool Royal Infirmary in September, 1853, was the turning-point of his life, and his connexion with Liverpool, which lasted almost fifty-nine years, thus began. He was one of twenty-seven candidates, and his election was, no doubt, due to the brilliant testimonials given to him by his teachers—testimonials which show clearly how deeply interested his teachers were in him, for they laid stress on those very points of character and ability for which he was chiefly noted throughout his whole life. He more than justified the choice of the committee, which valued his services so highly that when his health broke down he was granted leave of absence for three months. Many years afterwards, when he had risen to the post of Senior Physician to the Infirmary, the tradition was still current that he was the best house-surgeon the institution had ever known.

During his period of residence at the infirmary he volunteered to go out to attend to the sick and wounded soldiers during the Crimean war, but his offer was declined.

On leaving the infirmary in 1855 he was appointed Lecturer on Anatomy, Physiology, and Pathology at the Royal Infirmary School of Medicine, jointly with Mr. Fletcher, and the same year he settled in practice in Hope Street, and was elected Honorary Medical Officer to the North Dispensary; this office he filled until his election as Honorary Physician to the Northern Hospital in 1860. In 1857 he was appointed Secretary to the Lancashire and Cheshire Branch of the British Medical Association. This appointment afforded him a great deal of pleasure and was instrumental in bringing him into relation with a large number of medical brethren. He resigned this post in 1863. He was President of this Branch in 1866–7. In 1857–8 he worked very hard at the preparation of his essay on the anatomy of the human lung, for which he was awarded the Fothergillian gold medal of the Medical Society of London, an honour of which he was justly proud.

In 1859 he passed the examination for the Membership of the Royal College of Physicians of London, and delivered the address on Physiology at the Annual Meeting of the British Medical Association. In 1860 he was elected Honorary Physician to the Northern Hospital without opposition. In 1861 he received the Doctorate in Medicine of St. Andrews University. In 1867 he was elected a Fellow of the Royal College of Physicians of London after being eight years a Member. In 1871 he was elected Honorary Physician to the Royal Infirmary without opposition, and occupied that position until he attained the age limit in 1886, when he became Consulting Physician in due course. In 1872 he was appointed Lecturer of Medicine to the Royal Infirmary School, and when in 1881 the school became part of the University College, he became the first Professor of Medicine. He was President of the Liverpool Medical Institution in 1878–9.

Dr. Waters was always closely associated with the British Medical Association, and was honoured by being elected to the office of President during the last visit of

the Association to Liverpool in 1883. The attendance was the largest up to that date, and the meeting was considered a remarkable success. As was the custom, the President was elected Vice-President for life. It is sad that his death should have taken place during this year, when the Association is to meet in Liverpool again, for it would have been a great pleasure to have had him present at such a time.

In 1884 he resigned the Chair of Medicine, having been connected with the Liverpool Medical School for twenty-nine years. He continued in active practice until about 70 years of age, and for some years afterwards occasionally saw patients at his own house, or in consultation.

In the spring of 1905, and when in his 78th year, he celebrated the jubilee of his membership of the Liverpool Medical Institution, and delivered to a large and enthusiastic audience a delightful address, consisting of notes and reminiscences, dealing especially with his student days in London and Paris.

Dr. Waters was a frequent writer and an original investigator of high order. Had he not resolved to devote himself to practical medicine it is certain he would have reached an eminent position in one of the auxiliary sciences, anatomy or physiology. The list of the articles, papers, etc., which he contributed to medical literature contains thirty-four entries. They deal with many subjects, but those to which he attached the most importance, and which will be longest treasured by the profession, are the essay on the anatomy of the human lung, published in 1860, and his book on *Diseases of the Chest*, of which the first edition appeared in 1868, and a larger second edition in 1873; it was also published in the United States of America. The essay of 1860 on the anatomy of the human lung was a great advance on any previous work on the subject, and for accurate and patient investigation, vigour of deduction, and lucidity of exposition could not be surpassed. He was the first to employ the term "air sacs" in describing the ultimate pulmonary tissue, and the first to recognize the exact disposition of these structures. He also established the true anatomy of the vascular supply to the bronchi and the course of the venous flow.

As a physician his practice chiefly lay in diseases of the chest, for which he enjoyed an immense reputation. He was constantly called in consultation throughout Lancashire and the adjacent counties and in North Wales. His students recognized in him a master on the physical examination of the lungs.

In 1879 he married Matilda, daughter of the late William Rotheram, a merchant of Liverpool. He leaves a widow, but no family.

Dr. Waters was a man of scholarly and literary tastes, which led him to recognize the necessity of the development of a higher education in Liverpool, and so he became an active mover in the establishment of the University College in that city, taking a leading part in the public movement to this end, and ultimately in the founding of the University of Liverpool, of which he was elected a life governor.

Although he lived to a great age, he never was physically strong, and on February 20th of this year he was stricken down with influenza, which was followed by a surgical complication of a very painful nature. He was attended with unremitting solicitude by Mr. R. Bickersteth and his nephew, Dr. T. R. Bradshaw. He passed away on June 8th at his residence, 69, Bedford Street, Liverpool. When his decease became known it was generally felt by all those who knew him personally, and by many members of the profession generally, that the world of medicine had lost one of its most scholarly and dignified members, and a man whose uprightness of character and high sense of honour, both in professional work and social environment, had always exercised an exemplary influence.

The large attendance of medical and other gentlemen at the memorial service held at St. Luke's Church testified to the marked esteem in which Dr. Waters was held by his fellow citizens. The service was fully choral, and was conducted by the Ven. Archdeacon Madden. The chief mourners were: Dr. T. R. Bradshaw (nephew), Messrs. Walter Gair, W. Crawford, W. Rotheram, H. Gair, Morris P. Jones, the Rev. Alex. Crawford, Mr. Robert Bickersteth, Nurses Knowles and Gibbon, and the Misses A. Byron and A. Fogg.

The general body of mourners included Sir James Barr (President-elect, British Medical Association), Dr. Percy Marsh (Chairman, Liverpool Division, British Medical Association), Mr. F. C. Larkin (representing the Council of the British Medical Association), Mr. Robert Jones (President of the Liverpool Medical Association), Dr. Bushby (Secretary, Liverpool Medical Institution), Vice-Chancellor Sir Alfred Dale (of Liverpool University), Professors Paterson, Sherrington, Glynn, Buchanan, Abram, and Rushton Parker. Representatives of the various hospitals and other local institutions were present and also a large gathering of medical men of the city and surrounding district. The interment took place at Childwall Church.

Sir DYCE DUCKWORTH writes: I should like to add an appreciation from one who has known Dr. Waters for many years. In my early days in the Liverpool Infirmary School, Dr. Waters was an energetic and respected teacher. He carried on original work, which was not then a frequent pursuit. As a physician he was thorough and painstaking. His demeanour was always calm and dignified, and he kept aloof from strife and discord. Few members of the profession in Liverpool have been regarded with greater respect and esteem. He was the fifth on the list of senior Fellows of the College of Physicians, and I have heard that he was complimented by Dr. Mayo, the President, when he passed his examination for the membership in 1859.

CHARLES HENRY ALLFREY, M.D., F.R.C.S.,

LATE PRESIDENT, SOUTH-EASTERN BRANCH, BRITISH MEDICAL ASSOCIATION.

IN the death of Dr. Charles Henry Allfrey, of St. Leonards-on-Sea, which occurred with tragic suddenness on April 16th, while he was walking on the Parade, we have to record the loss of an honoured member of the profession and of a useful and highly respected citizen.

Dr. Allfrey commenced his medical studies at King's College Hospital, and when he had completed his course there secured the post of House-Physician. He graduated M.D.Edin. in 1862 and took the diploma of M.R.C.S. in 1861, and afterwards spent some time in Paris in the study of medicine.

On entering practice he joined Dr. J. Hickstall Smith, of St. Mary Cray, and it was here that he spent the best years of his life.

He took an active part in the foundation of the Chislehurst and Cray Valley Hospital, as he did in all matters affecting the sanitary welfare of the neighbourhood; and in order to qualify himself more fully for the special demands made upon him in this respect he took the D.P.H.Cambridge in 1876, having some nine years previously become by examination F.R.C.S.Eng.

It was not till 1890, after some twenty-seven years of strenuous and useful work, that he moved to St. Leonards-on-Sea. His existence in the new home, however, was not to be one of leisure, as he immediately threw himself into public life, while he carried on practice as a consulting physician, with a view to which he had previously acquired the Membership of the Royal College of Physicians.

In 1892 Dr. Allfrey was elected Assistant Physician to the East Sussex Hospital, and was Consulting Physician to the hospital at the time of his death. For a number of years he occupied a seat on the Town Council, where he was particularly active as Chairman of the Sanitary Committee at the time of the establishment of the isolation hospital. In politics he was a keen Conservative, and was an energetic supporter of the Church, taking especial interest in the welfare of Church schools.

As a J.P. for the borough of Hastings he was a regular attendant on the Bench.

Of the British Medical Association he was always a warm supporter, and his election to the chairmanship of the South-Eastern Branch a few years ago was a fitting reward for the good work he had done on its behalf.

Among his colleagues he was deservedly popular, and the example that he set of disinterested and untiring labour in the public service may well stand as a stimulus to a younger generation.

THE death took place on May 28th, after a somewhat prolonged illness, of Dr. J. F. BUTLER-HOGAN, a medical man well known in the north of London as Medical Officer

of Health for the district of Tottenham. A Tipperary man, he entered the medical profession in 1889 as a holder of the Scottish Conjoint diploma. But before this he had been a student in the Faculty of Arts of the Royal University of Ireland, receiving the B.A. degree in 1887, and his studies did not cease with his attainment of a medical qualification. Working in turn in Ireland, London, and on the Continent, he became D.P.H.Camb. in 1893, M.D.Brux. in 1894, LL.B. of the Royal University of Ireland in 1904, and then, some twelve years later, M.D.Durh. and LL.D. of his own university. Meantime, too, he had been admitted to the Bar as a member of Gray's Inn, and had obtained in Scotland and Ireland exhibitions in jurisprudence and hygiene. His official connexion with Tottenham commenced some ten years ago, and he served the district not only as Medical Officer of Health but also as Medical Officer to the Education Committee. At one time and another he published a good many papers and two or three books on subjects connected with his special department of medicine. He was a member and Fellow of many professional associations, including the British Medical Association, the Royal Society of Medicine, the Society of Medical Officers of Health, the Medico-Legal Society, the Association of School Medical Officers, and the Royal Sanitary Institute. The interment took place at St. Patrick's Cemetery, Leytonstone, on June 1st, a Requiem Mass being held at the Church of St. Francis de Sales on the same day. Dr. Butler-Hogan was married, and is survived by his wife and by five daughters.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

Degrees.

THE following degrees have been conferred:

D.Sc. (*Honoris Causâ*).—F. H. Marsh.

M.D.—R. L. Prenlen, W. W. Jendwine, M. Phillips, H. H. Riddle, A. E. Show.

M.B.—H. W. Barber, H. G. Boyens, G. G. Johnstone, A. W. Gaye, N. F. Lock, P. A. O'Pie.

B.C.—H. G. Boyens, A. W. Gaye, N. F. Lock.

Honorary Degree of D.Sc. for the Master of Downing.

The Public Orator, Sir John Sandys, spoke as follows in presenting Professor Howard Marsh, Master of Downing College, for the complete degree of Doctor of Science *honoris causâ* on June 13th, 1912:

> Adest Collegii recentissimi Magister novissimus, quem hodie propterea inter benefactores nostros posuerim, quod ad Doctoris gradum perfectum iure dignitatis voluit accedere; qui honos non modo ipsi laudi est, sed etiam Academiae aliquatenus lucro et emolumento. Abhinc annos prope novem eundem, Chirurgiae Professorem auspiciis optimis electum salutavimus; virum ingenio vivido, iudicio subacto, rei chirurgicae denique scientia singulari praeditum laudavimus. Postea a Collegio Regali socium electum vidimus, atque abhinc annos quinque a Collegio illo Magistrum expetitum, quod olim fundavit Georgius Downing, baronettus. Ibi, adiutricis optimae non sine auxilio, omnia Magistri munera comitate summa explevit. Idem, in oppido nostro et Magistratus et Universitatis nomine Consiliarius constitutus, ne Martis quidem munera neglexit, olim pro patria etiam proeliari paratus. Viro tali, ut vitae suae totius propositum verbis idoneis exprimat, licet fortasse locum quendam Tullianum celeberrimum mutuari et suos in usus mutare:—cara nobis est Chirurgia; cara Collegia nostra; cari propinqui et familiares; "sed omnes omnium caritates patria una complexa est."*
>
> Duco ad vos et militem et magistratum et Magistrum optimum, virum scientiarum laude insignem, FREDERICUM HOWARD MARSH.

* Cicero, *De Officiis*, i, 57.

Examinations.

The following candidates have been approved at the examinations indicated:

FIRST M.B.—*Part I, Chemistry:* G. H. Bickley, J. M. Downie, A. G. Irving, E. G. Snaith. *Part II, Physics:* W. H. Blackburn, A. G. Irving. *Part III, Elementary Biology:* W. H. Blackburn, C. V. Braimbridge, F. T. Burkitt, A. E. Clark Kennedy, J. M. Downie, E. O. Goldsmith, A. G. Irving, H. J. T. Neilson, G. S. Taylor.

THIRD M.B.—*Part I, Pharmacology and General Pathology:* J. H. Baldwin, W. N. Child, M. Donaldson, H. A. Douglas, A. G. Evans, J. C. John, A. Kennedy, W. M. Lupton, E. L. K. Sargent, V. F. Soothill, D. L. Spence, H. A. Watermeyer.

M.C.—J. L. Austin, F. J. Cleminson.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN Ordinary Council was held on June 13th, Sir Rickman John Godlee, Bart., President, in the chair.

Diploma of Fellowship.

Diplomas were granted to twenty-five candidates found qualified for the above. Three further candidates passed the examination, but, being under age, diplomas were not granted to them.

Diploma of the Licence in Dental Surgery.

The diploma was granted to forty-three candidates.

Practical Anatomy.

A committee was appointed to inquire into the difficulties that have arisen with regard to obtaining bodies for purposes of examination and dissection and for the teaching of operations, with power to confer with the teachers of anatomy and with other bodies.

Communication from the Deans of Dental Schools of London.

The following communication was read:

> On behalf of the four Dental Schools in London, we the undersigned ask the Royal College of Surgeons to so alter the regulations relating to the Diploma in Dental Surgery of the College that the Preliminary Science Examination shall be passed by all candidates before they commence any portion of the work required for the Second Professional Examination.
>
> SIDNEY SPOKES, Dean, National Dental Hospital.
> WILLIAM WRIGHT, Dean, London Hospital.
> HERBERT L. EASON, Dean, Guy's Hospital.
> W. H. DOLAMORE, Dean, Royal Dental Hospital.

The matter was referred to the Board of Examiners in Dental Surgery to consider and report thereon.

Addresses of Congratulation.

The President was requested to present an address of congratulation to Trinity College, Dublin, on the occasion of the bicentenary festival of its Medical School next month; and also an address of congratulation to the Royal Society on the celebration next month of the 250th anniversary of its foundation.

Election of Four Fellows into the Council.

A meeting of the Fellows will be held at the College on Thursday, July 4th next, for the election of four Fellows into the Council of the College in the four vacancies occasioned by the retirement in rotation of Sir Frederic Eve, Sir Anthony A. Bowlby, and Mr. Gilbert Barling, and by the death of Sir Henry T. Butlin.

The full list of candidates is:

Sir Frederic Samuel Eve (Fellow, 1878).
Sir Anthony Alfred Bowlby (Fellow, 1881).
Harry Gilbert Barling (Fellow, 1881).
James Ernest Lane (Fellow, 1882).
D'Arcy Power (Fellow, 1883).
Louis Albert Dunn (Fellow, 1884).
Sir Berkeley Moynihan (Fellow, 1890).

Revised Synopsis in Dental Surgery.

The Board of Examiners in Dental Surgery report that in their opinion the time has now come when it is desirable that the synopsis of surgery and surgical pathology for the final examination adopted in 1905 should be revised. The Board have accordingly carefully considered the synopsis and have decided to recommend the Council to adopt the following revised synopsis, which adds very little to the scope of the examination, but arranges the subjects more systematically.

The Board further recommend that the revised synopsis should come into force on May 1st, 1913.

Surgery and Surgical Pathology.

Micro-organisms.—Elementary knowledge of in their relation to pathological processes.

Inflammation.—Causes. Vascular and structural changes. Clinical signs and constitutional symptoms. Terminations.

Boil. Abscess. Carbuncle.

Ulceration.—Nature of process. Chief varieties of ulcers of skin.

Sinus and Fistula.

Gangrene.—Causes. Varieties.

Erysipelas.—Sapraemia. Septicaemia. Pyaemia.

Tetanus.—Cause and symptoms.

Tuberculosis.—Modes of infection. Changes in the tissues. Terminations. General principles of treatment.

Tuberculosis of Lymphatic Glands and of Bone.

Actinomycosis.—Modes of infection. Signs and treatment when occurring in head and neck.

Syphilis.—Modes of infection. Stages, symptoms, and treatment of acquired and congenital forms.

Haemorrhage.—Varieties. Arrest of haemorrhage.

Haemophilia.

Syncope. Collapse. Shock.

Wounds.—Classification. Process of healing. Treatment.

Fractures.—Causes, varieties, signs, and symptoms. Process of union. General principles of treatment. Signs and treatment of fractures of the bones of the face.

Joints.—General signs and treatment of dislocations. Special knowledge of dislocation of shoulder-joint and of temporo-maxillary joint.

Blood Vessels.—Injuries of vessels and their consequences. Atheroma. Calcification of arteries. Causes and chief forms of aneurysm. Varicose veins. Thrombosis and embolism.

Nerves.—Results of injury to nerves. Common causes of paralysis. Neuritis. Neuralgia. Special knowledge of affections of the Vth and VIIth cranial nerves.

New Growths.—Meaning of terms "innocent" and "malignant." General structure and classification of tumours. Diagnosis and treatment of the more common tumours.

Cysts.—Varieties and classification. Diagnosis and treatment of cysts of the head and neck.

Diseases of Bones.—Periostitis, osteitis, osteomyelitis, caries, necrosis. Symptoms and treatment of diseases of the bones of the face.

Tumours of Bone.

Rickets.—Causes and signs. Changes in bone.

Scurvy.

Surgical Affections of the Head and Neck.—Wounds of head and neck. Cut throat. Foreign bodies in the air passage and in the food passage. Dysphagia. Dyspnoea. Laryngotomy and tracheotomy.

Diseases of the Lymphatic Glands in the Neck.

Diseases of Temporo-Mandibular Joint. Closure of Jaws.

Mouth and Lips.—Stomatitis—causes, varieties, symptoms, treatment. Salivary calculus. Ranula and other cysts of mouth. Hare-lip. Epithelioma. Herpes. Syphilis. Tubercle. Naevus. Papilloma. Cancrum oris. Oral sepsis; its influence in the causation of disease.

Tongue.—Glossitis, acute and chronic. Papilloma. Epithelioma. Ulcers. Gumma. Wounds of tongue.

Palate.—Cleft palate. Tumours of palate. Ulceration. Necrosis.

Tonsils.—Varieties of tonsillitis, diagnosis, consequences and treatment. Chronic enlargement of tonsils. Ulceration of fauces.

Gums.—Surgical affections, causes, diagnosis, and treatment.

Maxillary and Frontal Sinuses.—Surgical affections, causes, diagnosis, and treatment.

Nose and Pharynx. — Inflammatory affections. Ozaena. Polypi. Foreign body in nose. Lupus and syphilis of nose. Rodent ulcer of nose and face. Epistaxis. Adenoid vegetations.

Parotid and Submaxillary Salivary Glands. — Surgical affections.

Submaxillary Cellulitis.

Larynx.—Scald. Spasm of glottis. Œdematous laryngitis. Diphtheritic membrane in nose, throat, or larynx.

Neck.—Torticollis. Causes of stiff neck. Caries of cervical vertebrae. Cervical abscess. Bronchocele.

Eye.—Conjunctivitis. Iritis. Corneal ulcers and opacities. Ptosis. Strabismus.

Anaesthetics.—With special reference to their use in dental surgery. Preparation of a patient for the administration of an anaesthetic.

Artificial Respiration.

Admission to Fellowship.

The following candidates have been admitted to the Fellowship:

R. P. Wilson, Major I.M.S., L. Cook, Captain I.M.S., R. M. Carter, Captain I.M.S., G. H. L. Whale, E. D. Davis, H. F. Strickland, E. R. Flint, K. A. Lees, J. Everidge, R. W. Rix, C. C. Holman, A. L. Candler, A. C. Sturdy, G. G. Alderson, A. H. Richardson, D. Wood, E. G. Stanley, F. J. Cleminson, T. D. M. Stout, T. E. A. Stowell, J. P. I. Harty, E. E. Hughes, W. Phillips, A. L. Walker, and G. B. Warburton.

Three other candidates—namely, Messrs. T. T. Higgins, H. L Martin, and A. L. Robinson—will be admitted so soon as they have attained the requisite age.

Public Health AND POOR LAW MEDICAL SERVICES.

JOINT COMMITTEE OF MEDICAL OFFICERS' ASSOCIATIONS.

WE are informed that a meeting of the above Committee was held at the Holborn Restaurant on Friday, June 14th. Owing to the unavoidable absence of Dr. Bott, Dr. Owen Fowler was voted to the chair. The Honorary Secretary submitted the two following resolutions from the Association of Medical Officers of Health:

(*a*) That the conjoint committee of the several associations of medical officers holding part-time appointments be requested to consider the advisability of organizing as quickly as possible local branches throughout the country of medical practitioners holding part-time appointments under Government and local authorities to work in conjunction with the central committee.

(*b*) That the conjoint committee be requested to consider the best means of securing at the annual general meetings of the constituent associations the attendance of members of other associations.

After a full discussion it was unanimous decided to take steps to organize branches as outline in resolution (*a*), and to ensure as far as possible the attendance of members of the constituent associations at the annual meetings as outlined in resolution (*b*). Attention was drawn to the forthcoming meeting of the Poor Law Medical Association at Bristol, on Tuesday, June 25th. The Committee expressed the hope that many practitioners holding part-time appointments will attend, when some important questions will be discussed. It was resolved that Dr. Major Greenwood be asked to bring up for discussion the desirability of establishing at Bristol a branch for the West of England.

Dr. Bott was again elected Chairman for the ensuing year, and Dr. Parkinson, of Wimborne, and Dr. D. A. Belilios were elected Honorary Treasurer and Honorary Secretary respectively.

THE ILFORD COUNCIL AND ITS M.O.H.

THE *Ilford Recorder* of June 14th reports an incident at the meeting of the Ilford urban district council which the information so far made public leaves very mysterious. At the ordinary meeting of the council on June 11th a minute adopted by the council in committee was confirmed. It was to the effect that during last month Dr. C. F. Stovin, the medical officer of health, had caused a builder employed by him to lop or cut down a tree on certain premises of which Dr. Stovin was the owner, that the council had interviewed Dr. Stovin, and had thereafter passed a resolution stating that he had forfeited the confidence of the council and asking him "whether he is prepared to tender his resignation forthwith; failing which, a deputation apprise the Local Government Board of the full facts of the matter, with a view to determining his appointment as medical officer of health, school medical officer, and medical superintendent of the isolation hospital." Dr. Stovin, when informed of this resolution, stated that he would resign if required to do so by the Local Government Board. It appears from the report that a letter had been received by the district council from the Local Government Board asking to be furnished with a statement in writing of the full facts of the case. The chairman of the public health committee, who had not been present at the previous meeting, protested that the matter ought to be cleared up, and desired to know definitely whether the purpose was to hold an inquiry into all that was going on in the public health department. No definite public answer was given to this inquiry, but it would appear that the council afterwards considered the matter in committee. The *Ilford Recorder*, in commenting on the case, says: "It certainly is not usual in English public life to disclose to an uninformed public a piece of evidence so completely condemnatory of a man as to suggest the very worst, while withholding the actual data upon which the impressions of the censors have been based"; and every one will agree that whatever reasons the district council may have for inviting the resignation of its medical officer should be made public without delay. As Iford has grown to be a big place with some 80,000 inhabitants, and Dr. Stovin is a whole-time officer, the seriousness of the position is obvious.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Borough of Dudley.—In the report for 1911 of the Medical Officer of Health for the Borough of Dudley (Dr. J. H. Wilkinson) the death-rate from all causes is estimated at 15.69 per 1,000, being a slight increase on the figures of the previous year. The increase was due to an epidemic of measles, which caused the deaths of 33 children and young persons. The birth-rate was slightly higher than in the previous year, being 27.5 per 1,000. During the year most valuable work has been done in extending the water-carriage system. The work of improving the cleanliness, dryness, and general sanitary condition of certain dwelling-houses has been attended with much difficulty at times, owing to the existence of much old and badly constructed property in the town, but many valuable improvements have been effected. An improvement scheme is much needed for dealing with some of the streets and courts in the centre of the town. A large proportion of the town consists of small cottages, originally bad in construction and design, and many of them are grouped in narrow streets and courts, without any sort of orderly method or arrangement. On the other hand, there are few back-to-back houses and practically no congested areas. The sanitary conditions of the schools have been much improved. A public abattoir would be of great benefit in protecting the people against diseased meat, but, in the opinion of the medical officer of health, it would be useless unless the council had the power to close all private slaughterhouses. The town council has not provided or assisted in providing any accommodation or treatment of consumption.

A NEW edition of the *Souvenir of Royal Tunbridge Wells* has been issued. It is now adorned by some admirable pictures of the town and its neighbourhood in colours as well as by reproductions of ordinary photographs. The text gives a good account of the attractions of the place both for visitors and residents. Copies can be obtained on application to the Town Clerk, post free in return for two penny stamps.

British Medical Journal.

SATURDAY, JUNE 22ND, 1912.

NATURE AND NURTURE.

SINCE the days of Charles Darwin three names stand out prominently as contributors to the advances made in the theoretical aspects of biological knowledge. These are the names of Francis Galton, Gregor Mendel, and August Weismann. Not only has the individual work of each of these men been of vast importance, but the impetus which their investigations have given to research into all the many-sided problems of heredity has been enormous. In this country at least the name of Bateson will also always hold a prominent place, since it is largely through him and the school which he has established that the epoch-making work of the Abbot of Brünn has been made familiar to us. As one outcome of this may be mentioned the increased attention now paid to the facts of inheritance in relation to disease in the social as well as in the individual organism.

In thus accentuating the importance of the work of the so-called Mendelian school, there is no intention to minimize the value of the work done by the biometricians. The ultimate aim of both is the acquirement of exact knowledge, the application of which may lead to race betterment, but the method of attacking the problems differs. The biometrician deals with statistics, with evidence in bulk. The Mendelian investigates inheritance in individual cases. The greater the number of cases recorded the more reliable the deductions, but the evidence is of necessity based on relatively smaller numbers. To mention but one instance, the inheritance of brachydactyly. The evidence deduced from the reported cases is of great value, but from the biometric standpoint these cases are so few in number as to be of relatively little importance. It is for this reason that the Mendelian principles of heredity appeal most to the clinician, as he can individually, by the careful and exact study of a few cases, materially assist in the advancement of knowledge.

The investigation of these principles in their relation to disease-transmission is one of the great features of the past decade. In support of this it is only necessary to mention the work of Nettleship and Mott. In a recent number of *Brain* the latter has added yet another valuable contribution to the subject from the clinical standpoint. In this article Dr. Mott deals with the "inborn factors of nervous and mental disease," and gives a series of illustrative pedigrees.

Among the many results brought to light by a careful analytical inquiry into the facts of the hereditary transmission of disease not one is of greater interest than the discovery that certain diseases are sex-limited—by which is meant that the disease may be limited to one sex, but is transmitted by the sex in which the disease does not appear. A very remarkable and complete instance of such a case has recently been published by Nettleship showing the pedigree of congenital night-blindness with myopia.[1] In addition to night-blindness, there is evidence for believing that colour-blindness, haemophilia, pseudo-hypertrophic paralysis, and Leber's disease may very probably be included in the list of sex-limited diseases. In the known cases of transmission it is the males who inherit; the females transmit.

In studying the transmission of disease the contributing factors of nature and nurture have to be carefully analysed and weighed. To arrive at an estimate of the proper contribution of the former is the main object of an inquiry into family histories, and Dr. Mott, in the article mentioned, shows the many pitfalls which beset attempts to arrive at just conclusions in nervous and mental diseases. He gives a word of warning when he states that he is "of opinion that various causes, such as alcoholism, infective diseases, auto-intoxications, physical injury, especially head injuries and shocks, emotional shock, sexual excesses, and unnatural practices are too often wrongly assigned as the *sole* cause of nervous and mental disease, to the neglect of the inborn factor." There is no doubt much truth in this. Alcohol may be the cause in a certain number of cases of insanity in persons without any hereditary taint; but it more readily affects those who have an inherited mental weakness and in whom there is less power of control to withstand the temptation.

Dr. Mott is evidently a strong believer in the potency of the inborn factor, and with this belief many biologists will be disposed to agree; but this very belief raises the perennial question of the inheritance of acquired characters. Ever since the publication of Weismann's theory of the germ plasm, the possibility of the transmission of acquired characters from parent to offspring has very generally been regarded as highly improbable, if not impossible. There are not wanting signs at the present time that many biologists are beginning to waver, and a consideration of the facts of disease transmission would appear to have a direct bearing upon the argument.

To say that a disease, or even the tendency to disease, is inherited is but to shift the problem a stage further back. Disease is not the normal condition of a healthy organism, or to put it another way, organisms were originally by nature healthy; disease must therefore have been at its inception an acquired character, that is to say, disease is a somatogenic character. Weismann defines acquired or somatogenic characters as "those which are not preformed in the germ, but which arise only through special influences affecting the body or individual parts of it. They are due to the reaction of these parts to any external influences apart from the necessary conditions of development." Many pathological states at the very commencement of their evolution must have satisfied this definition. If, then, disease cannot be entirely a matter of germinal variation, such variation must be due to influences operating upon the germ plasm from without, that is, influences acting through the somatic cells. The existence of such bodies as hormones furnishes a possible explanation of how such influences might take effect. Confirmation of the inheritance of acquired characters is to be found in Bordage's observations on peach trees in the island of Réunion.[2] This is no mere academic discussion, for, if disease at its inception is a somatogenic character, then it is possible that environment may originate it in an otherwise healthy stock.

Many writers at the present time appear to regard heredity as the last word in all matters appertaining

[1] *Trans. Ophthal. Soc.*, vol. xxxii, 1912.

[2] *Bull. scientifique de la France et de la Belgique*. Tome 44, 1910.

to eugenics in the widest sense of the term. Some enthusiasts are even clamouring for a health certificate before marriage. Legislation, on the other hand, has hitherto ignored heredity and has regarded environment as the sole object of its attention. It is obvious that both factors must be taken into account concurrently, not only in the study but also in the prevention of disease.

A further point to which Dr. Mott directs attention is what is called the "law of anticipation." Nettleship has also previously discussed the matter. By this term it is meant that the manifestation of an inherited morbid change tends to appear at an earlier age in successive generations or in the successive children of the same parents. In this connexion Mott makes an important pronouncement as the result of his wide experience. He says that he has "often observed that there is a general tendency for insanity not to proceed beyond three generations. There is frequently either a regression to a normal type or the stock dies out. Not infrequently the stock dies out by the inborn tendency to insanity manifesting itself in the form of congenital imbecility or in the insanity of adolescence. Such patients, especially paupers, are prone to die of tuberculosis; thus rotten twigs are continually dropping off the tree of life." In support of this conclusion reference is made to Morel, who in 1859 pointed out "that progressive uninterrupted transmission leads finally to special degenerative forms, to imbecility and idiocy, and with the diminished capability of propagation of the latter kind the stock therefore gradually becomes extinct."

Such statements are of hopeful augury, but it is necessary at present to accept them with reserve. In the first place, Is it true that there is this "diminished capability of propagation" in aments? The report of the Royal Commission on the Feeble-minded, and the pedigrees furnished by Mrs. Hume Pinsent and others, seem to point to an opposite conclusion. Even if it be admitted, for the sake of argument, that this power is diminished below the normal, it at least appears to exceed the present average capacity of the desirable stratum of society. Of course the diminished capacity in the latter may be the result of a purposive artificial lowering, but to whatever cause it may be due the danger to the community remains. Again, if by the law of anticipation insanity tends not to proceed beyond three generations, but the stock tends to die out "by the inborn tendency to insanity manifesting itself in the form of congenital imbecility, or in the insanity of adolescence," yet so long as the congenital imbeciles are at liberty to procreate children at all, present experience teaches that these children are likely to become more or less permanent charges upon the State. There may be a natural tendency to a reduction in the total number of dements, but, if this is correlated with an increase in the number of aments, we are, in the present state of the law, in a parlous condition. In those cases in which there is a regression to a normal type is there any evidence that the offspring may not again exhibit mental instability? It would be quite in keeping with Mendelian characters for it to do so.

Such considerations do not in the least detract from the value and scientific interest of the investigation of the law of anticipation, neither do they lessen the importance of the opinions expressed by so eminent an authority as Dr. Mott, but there is the danger that such statements may be used as arguments in support of the policy of legislative inactivity, from which the community is, in this connexion at any rate, suffering. It would be so easy for self-complacent persons in authority to say that expert opinion declares that the general tendency is for insanity to die out in three generations—the power already exists to control the insane—therefore nothing more is required. Upon every ground, therefore, the need is urgent for statutory powers to deal with aments above the age of 16, and, above all, for the establishment of a central board of control to superintend the care and management of aments and dements alike. Such a board was recommended by the Royal Commission.

As yet there has not been time to keep records of the hereditarily tainted for more than three generations, except in a very few cases. It is of the greatest importance that they should be carried further. Adequate provision for the continuation of the investigation is, no doubt, made in asylums by the card system, but this is not sufficient. The establishment of a statistical bureau connected with the local authority of each of our large towns to keep, over a period of several generations, a record, as far as possible continuous, of all persons mentally affected, either aments or dements, would be of the greatest value. It can hardly be doubted that the information so obtained would enable action to be taken which would in the long run result in economies that would much more than counterbalance the initial expenditure.

RUSKIN'S VIEWS ON THE MEDICAL PROFESSION.

THE appearance of the general index in a volume of the noble Library Edition (in thirty-nine volumes) of Ruskin's works[1] makes it easy at once to discover all that the author, scattered through the 2,750 items enumerated in the bibliography of his writings, said about any one subject in the course of his sixty years of authorship. Passing over Mr. Ruskin's references to his friends in the medical profession—amongst whom were Dr. Jephson of Leamington, Sir Henry Acland, Sir William Gull ("the living Aesculapius"), Sir John Simon ("my old friend and Knight of the Hammer"), and Dr. George Parsons of Hawkshead—we turn our attention to the things said about doctors in general.

For instance, in pleading with the architects of his day for imagination in their work, Ruskin says (*The Two Paths*): "Observe, nearly every other liberal art or profession has some intense pleasure connected with it, irrespective of any good to others"; and adds: "As lawyers, or physicians, or clergymen, you would have the pleasure of investigation and of historical reading as part of your work; as men of science you would be rejoicing in curiosity perpetually gratified respecting the laws and facts of Nature." Now, without pursuing Ruskin's argument with the architects—whom he would have to be sculptors—we find here a fact often lost sight of by the medical man sick of the monotony of daily practice and unable always to find happiness in the good he is doing to others: he can have intense pleasure in investigation, he can perpetually gratify his curiosity regarding the laws of Nature, and rejoice. We may smile a little at Ruskin's enthusiasm; but is there not after all truth, cheerful truth, in the heart of it, and may not a doctor "with this clause make drudgerie divine," and even contract practice fine? We must grant him sufficient spare time, of course.

In one of his writings upon political economy (*Unto this Last*) Ruskin enters on the prickly path of

[1] *The Complete Works of John Ruskin.* Library Edition. Edited by E. T. Cook and Alexander Wedderburn. Vol. xxxix: General Index. London: George Allen. 1912.

adequate remuneration. He seems, with delightful liberality, to concede the guinea as the medical man's proper fee. "Sick," he says, "we do not inquire for a physician who takes less than a guinea. . . . Caught in a shower, we do not canvass the cabmen to find one who values his driving at less than sixpence a mile." He admits, however, that the number of candidates for the office may make a difference. "If it were thought that the labour necessary to make a good physician would be gone through by a sufficient number of students with the prospect of only half-guinea fees, public consent would soon withdraw the unnecessary half-guinea." It has, Mr. Ruskin, it has, and that without waiting for the sufficient number of contented students! It is curious to note how fixed our author's view was about the guinea fee. In a later book (*Fors Clavigera*, Letter 14) he announces that his books are all to be sold at half a guinea for those without plates and a guinea for the illustrated volumes; and he gives as his reason, "I do not care that anybody should read my books who grudges me a doctor's fee per volume." He rather came to grief over this matter of the doctor's fee per volume, for a Glasgow man wrote to him, saying, "No doctor, here at least, would ever think of charging me a fee of 10s. 6d.," and pointing out that "Doctors who have acquired, either professionally or otherwise, a competence, often—nay, very often—give their advice gratis to nearly every class, except that which is really wealthy." Ruskin answered the Glasgow man, but we think that he had scarcely the best of the argument.

He is on safer ground when he deals with the duty the medical man owes to the public, and for the doing of which he is honoured. "Whatever his science," says Ruskin, "we would shrink from him in horror if we found him regard his patients merely as subjects to experiment upon; much more, if we found that, receiving bribes from persons interested in their deaths, he was using his best skill to give poison in the mask of medicine." He sets a high standard for the medical profession. There "have hitherto existed," he says, "five great intellectual professions, relating to daily necessities of life—three exist necessarily in every civilized nation: the Soldier's profession is to defend it; the Pastor's is to teach it; the Physician's is to keep it in health; the Lawyer's to enforce justice in it; the Merchant's to provide for it. And the duty of all these men is, on due occasion, to *die* for it." Ruskin defines "on due occasion" for the soldier as "rather than leave his post in battle," and for the physician as "rather than leave his post in plague." But, of course, "the labourer is worthy of his hire," and in another book (*The Crown of Wild Olive*) Ruskin puts the fee question fairly and finely for all time: "Doctors like fees, no doubt—ought to like them; yet if they are brave and well educated, the entire object of their lives is not fees. They, on the whole, desire to cure the sick; and—if they are good doctors, and the choice were fairly put to them—would rather cure their patient, and lose their fee, than kill him, and get it. Their work is first, their fee second—very important always, but still *second*." We shall all agree with Ruskin here.

We have not by any means exhausted Ruskin's references to doctors; but we must close with two more, and two only. One is the remark in a letter to his Edinburgh friend, Dr. John Brown (author of the world-famous *Rab and his Friends*): "I cannot fancy any study or work in this age so noble as that of a physician." The other is in *Fors Clavigera:* "You ought to read books, as you take medicine, by advice, and not advertisement." As an afterthought, Ruskin adds, "perhaps, however, you *do* take medicine by advertisement, but you will not, I suppose, call that a wise proceeding? Every good physician, at all events, knows it to be an unwise one, and will by no means consent to proclaim even his favourite pills by the town-crier."

THE SERUM DIAGNOSIS OF HYDATID DISEASE.

HYDATID infection is so rare in the United Kingdom that few practitioners have had opportunities to become familiar by personal experience with the difficulties which may arise in its diagnosis, with the risks attending its course, and with the serious problems which arise in its treatment. It is far otherwise in Australia, where the possibility of hydatid disease can never be absent from the mind of the physician in any obscure case. In British textbooks the diagnosis is not, as a rule, adequately discussed, and, according even to some of the most recent, the main diagnostic signs are the recognition of the "hydatid thrill" and the results of exploratory puncture revealing the presence of the characteristic hooklets. The thrill is by no means always present. It is not usually to be observed when the cyst is small, a period when suitable treatment gives the best result, and is apparently hardly ever present in hydatid of the lung. Dr. Lendon, of Adelaide, whose book on hydatid disease of the lung is probably the most comprehensive hitherto published, at any rate in English,[1] says that "the peculiar fremitus of the hydatid cyst—which is a rare sign at any time—is still more rare in connexion with thoracic cysts," and adds that he has only met with it twice. From his discussion of the diagnosis of an unruptured cyst of the lung—and to make the diagnosis at this stage is the chief aim of the physician—it is to be gathered that impairment of the movements of the chest, enlargement of the chest and possibly some obliteration of the intercostal spaces, alteration of resonance on percussion over the area of deficient movement and loss of the respiratory murmur in the same area, are the most characteristic physical signs of a cyst which has not attained a size large enough to produce obvious pressure symptoms. It is clear, therefore, that the diagnosis may raise very nice problems. Dr. Lendon sums up by saying that "there is no single physical sign which is pathognomonic of an unruptured pulmonary cyst; that localized bulging, though most suggestive, may be also caused by a localized empyema; that a curved upper border of dullness is common in pleurisy with effusion; that when situate in the upper lobe it may simulate phthisis, and in the lower lobe it closely resembles pleurisy; that pleural effusion may co-exist and mask the hydatid disease; and that a secondary growth in the lung may be mistaken for a cyst. We may be, and frequently are, right in our diagnosis; we can never be absolutely certain."

Formerly, as some textbooks still advise, it was the rule to establish the diagnosis by making a puncture, and occasionally this simple procedure was followed by cure; but Lendon, in accordance with most authorities, says that the dangers of this method of treatment far outweigh any possible advantage, and that "it is now on all sides acknow-

[1] *Clinical Lectures on Hydatid Disease of the Lungs.* By A. A. Lendon, M.D.Lond., Lecturer on Obstetrics and Clinical Lecturer on Diseases of Children in the University of Adelaide. London: Baillière, Tindall and Cox. 1902.

ledged that the only effectual treatment of hydatid cysts of the lung is surgical, and that such treatment should, if possible, be radical in its scope, and not merely palliative." A piece of rib is excised, the cyst incised and emptied, and the mother cyst extracted with appropriate forceps from the cavity in the lung. As early operation before the cyst has attained a large size or ruptured is obviously the object to be aimed at, any new method of examination which would enable an early diagnosis to be made with increased confidence will be welcomed by those who have most to do with the disease.

As in several other cases, where ordinary clinical signs and symptoms have proved inadequate for diagnosis, recourse has been had to serological methods, and such good progress has been made that already, it may be assumed, the tentative stage has been passed, and there is some show of practical applicability. Although the subject is not yet more than six years old the output of literature dealing with it has already become very considerable. An important monograph on the serum diagnosis of hydatid disease has just been completed by Pfeiler of Berlin.[2] He enumerates over 120 references, representing work of some 70 independent observers. All the methods in common use in serum diagnosis have been applied, in particular the precipitin reaction, the complement deviation method with its several modifications, and the meiostagmine reaction. Chief attention has been directed to the first two, and with regard to them a large number of reliable observations are available. From these it may be gathered that the method which offers the most promise, which affords indeed a very sound and reliable means of diagnosis, is the complement deviation method. It would appear that it is certainly as least as reliable as the corresponding reaction in syphilis, and probably more so. Estimates vary as to the percentage of equivocal or erroneous results, but probably they do not greatly exceed 10 per cent.; a positive reaction may be regarded as almost absolutely diagnostic of *Echinococcus*. The antigen is specific to a very high degree. The only possible exception to this is afforded by some experiments of Meyer which go to show that animals harbouring *Taenia* in their intestine may exhibit a positive reaction. That the same applies to man has not yet been demonstrated, but the possibility is one which should be borne in mind. With regard to negative results there is one universally recognized source of error—namely, cases in which the cyst has become septic. Such cases almost invariably give a negative reaction. Most of the technical modifications employed in the case of syphilis—such, for instance, as those of Stern, Bauer, Hecht, and Noguchi—have been made use of, and successful results have been obtained with each of those by various observers.

In comparison with the complement deviation method the precipitin reaction has given much less reliable results. It is certainly accurate in a considerable percentage of cases, but unfortunately there appears to be no doubt that for some reason or other it fails in not a few instances. It has therefore not the absolute value of the deviation method, but it may be ascribed a certain importance as an aid to diagnosis. In regard to Ascoli's meiostagmine reaction, which is a surface tension phenomenon, much less work has been done, and the results are conflicting. Ascoli made two positive observations, and Izar ten; but, on the other hand, Weinberg and Jonesco-Mihaiesti report ten absolutely negative results.

More work will probably be required before the true value of this last reaction in hydatid disease can be ascertained. In any case, however, we appear to have obtained in the complement deviation method a very valuable and important means of diagnosing a highly dangerous disease. It remains to be seen whether Henius's encomium,[3] "one of the most brilliant advances of serum diagnosis," will be justified by results.

[2] *Zeitschr. f. Infektionskrankh. der Haustiere* 1912. Bd. xii. Heft 1, pp. 70-96; Heft 2, pp. 153-169; Heft 3-4, pp. 255-304.

[3] *Deut. med. Woch.*, 1911, p. 1212.

BIRTHDAY HONOURS.

THE birthday honours list issued on June 14th made the announcement that the King had conferred a baronetcy upon Mr. Rickman John Godlee, President of the Royal College of Surgeons of England, Honorary Surgeon in Ordinary to the King, Surgeon to the University College Hospital, and Holme Professor of Clinical Surgery in the University College Hospital Medical School. Mr. Godlee, who graduated M.S.Lond. in 1873, and took the diploma of M.R.C.S.Eng. in 1872 and that of F.R.C.S. in 1876, was elected President of the Royal College of Surgeons in succession to Sir Henry Butlin last November. The list also contains the announcement that the King has conferred the honour of knighthood upon Mr. Berkeley G. A. Moynihan, F.R.C.S., Surgeon to the Leeds General Infirmary, and Professor of Clinical Surgery in the University of Leeds; upon Lieutenant-Colonel David Prain, F.R.S., late I.M.S., formerly Director of the Royal Botanical Gardens, Calcutta, and since 1905 of the Royal Botanic Gardens, Kew; Mr. John Bland-Sutton, F.R.C.S., Surgeon to the Middlesex Hospital; Dr. StClair Thomson, Physician for Diseases of the Throat, King's College Hospital, and Professor of Laryngology in the College; and Dr. Abraham Garrod Thomas of Newport, Monmouthshire, who was President of the South Wales and Monmouthshire Branch of the British Medical Association in 1900–1, and is now Chairman of the Monmouthshire Division, Consulting Physician and Chairman of the Board of Management of the Newport and Monmouthshire Hospital, which, largely through his exertions, was re-erected in 1895 on a better site with suitable surroundings. He was High Sheriff for Cardigan in 1900–1, and is a Justice of the Peace for Monmouthshire, Cardiganshire, and the County Borough of Newport. Surgeon-Major-General Alexander Frederick Bradshaw, C.B., who has been appointed K.C.B., served in the Indian Mutiny 1857–9 and accompanied the Zhob Valley Expedition in 1884 and the Hazara Expedition in 1891 as Principal Medical Officer. The following have been appointed as Companions of the Bath: Surgeon-General William Babtie, V.C., C.M.G., Deputy Director-General, Army Medical Service, and Colonel Robert N. Campbell, C.I.E., I.M.S., who served with the Naga Hills Expedition in 1877–80 and with the Akhla Expedition, 1883–4. The King has conferred the dignity of K.C.V.O. upon Professor Alexander Ogston, M.D., Surgeon in Ordinary to the King in Scotland, Consulting Physician to the Aberdeen Royal Infirmary, and Emeritus Regius Professor of Surgery, University of Aberdeen. The distinction of C.V.O. is conferred upon Mr. G. L. Cheatle, C.B., F.R.C.S., Surgeon to King's College Hospital and to King Edward VII Hospital, and upon Dr. P. Horton-Smith Hartley, M.V.O., M.D., Physician in charge of Out-patients, St. Bartholomew's Hospital, and Physician to the Brompton Hospital for Consumption, and upon Inspector-General Belgrave Ninnis, R.N. (retired) M.D. The distinction of M.V.O. of the Fourth Class is conferred upon Mr. Willie Netterville Barron, M.R.C.S., of Ascot, Surgeon-Apothecary to the Household of Their Royal Highnesses Prince and Princess Christian. The distinction of C.S.I. is conferred upon Surgeon-General Henry Wickham Stevenson, I.M.S.,

Surgeon-General to the Government of Bombay, and an additional member of the Council of the Governor of Bombay for making laws and regulations; and that of C.I.E. upon Lieutenant-Colonel Charles Henry James, I.M.S., Medical Adviser, Patiala State. The Kaisar-i-Hind Gold Medal for public service in India has been conferred upon M. R. Ry T. Madhaven Nair Avergal, M.D., a commissioner of the Madras Municipal Corporation. The distinction of C.M.G. is conferred on Dr. Andrew Balfour, Director of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum. The King has conferred the Decoration of the Royal Red Cross upon Miss Amy Nixon and Miss Mary Wilson, matrons, Queen Alexandra's Imperial Nursing Service.

THE PROPOSED EXTENSION OF THE GENERAL INFIRMARY AT LEEDS.

THE scheme for the enlargement of the Leeds Infirmary, of which we gave an account in our last issue, is one which must commend itself to all those who are interested in the welfare of the institution, whether that interest depends mainly on its charitable or on its teaching aspirations. As was pointed out in the description by our Leeds correspondent, there is but one general voluntary hospital in the city, and this is an advantage as leading to concentration of teaching and as guarding against overlapping in the dispensing of charitable benefits. Any one who studies the scheme in detail, more especially any one who is well acquainted with Leeds and with the surroundings of the infirmary, must be struck with the boldness of the scheme and with the enterprise which has been shown by the board in taking steps to secure the various properties required for carrying it out before the matter was made public. Especial credit is due to the chairman of the weekly board, Mr. Charles Lupton, for it was in his mind that the scheme originated, by him the board have been guided in completing the purchases, and he it is who has enlisted for the scheme the sympathy and the support which its intrinsic merits indeed should command, but which might not have been forthcoming had the presentment of the case from the point of view of the infirmary been in less capable hands. The cost of the scheme would of course have been much greater had the intentions of the infirmary as to the purchase of the adjoining property leaked out, and when one considers the large number of people who were of necessity cognizant of what was going on, it is, if not indeed matter for surprise, at least creditable that no such leakage did take place. After the matter was brought before the city council it was referred to a special committee, which we understand has reported favourably on the scheme as a whole, though there are some matters of detail calling for discussion and possibly amendment. There is, however, every prospect of the immediate requirements of the infirmary in the way of extension and improvement being generously met; provision will be secured for further extension when that is necessary, and a great public improvement will be carried out at a cost which will be much less than if the property had had to be purchased after the intentions of the corporation had been made public. It must be pointed out that the appeal for £150,000 was made at a time when the larger scheme was not in contemplation. As this larger scheme appears to be essential for the future development of the infirmary, it is unavoidable that a large proportion of the money must go in land. About £110,000 has been either promised or subscribed; should the terms mentioned in our last issue as having been submitted to the corporation be agreed to, then the infirmary will have expended some £50,000 in the purchase of land. If the public of Leeds and of Yorkshire generally desire an altar for their offerings we can commend none better to them than that which is afforded by the present and pressing requirements of the General Infirmary at Leeds.

THE PSYCHOLOGY OF "MARROWSKYING."

ALL actors live in dread of "marrowskying," that curious transposition of syllables which often illustrates the truth of the saying that from the sublime to the ridiculous there is but a step. The actor who said, "Stand back, my lord, and let the parson cough" (instead of "coffin pass") may have made a solitary slip, but in some persons "marrowskying" amounts to a veritable infirmity. We knew an excellent clergyman who was the delight of the more frivolous among his hearers because he was never known to preach a sermon without introducing a reference to a "farren big tree," or dwelling on the fact that "many are called but chew are fosen," ending the text with the impressing exhortation, "Be ye therefore of the fosen chew." We remember a fastidious lady shocking the porter at a railway station by telling him that she had only a "rag and a bug," meaning, of course, a rug and a bag. The name of the head of a famous college at Oxford has become proverbial for this kind of defect of speech. How does this kind of inversion arise? Professor Joseph Jastrow, the well-known American psychologist, says it is due to an "intrusion of the subconsciousness" of the speaker. We subconsciously construct our sentences before uttering them, and sometimes the preliminary framework gets mixed up with the permanent timber. According to the *Literary Digest*, Professor Jastrow says: "The complexity of speech requires the occupation with many processes at once, and some of these—the nicer, more delicate, less familiar ones—will receive the major attention, while the routine factors engage but a minor degree of concern. Slight fluctuations in the condition of the speaker—physiological ones, such as fatigue, and, for the most part, psychological ones, such as excitement, apprehension, embarrassment—will induce variations in the nicety of adjustment that are recognizable as typical slips of tongue or pen, and, still more significantly, of the tongue-and-pen-guiding mechanism. . . . There are the anticipations, the persistencies, the interchanges, the substitutions and the entanglements of letters, and of words and parts of words, and of phrases—all of them indicative of shortcomings in the minute distribution of attention and co-ordination." He gives a number of examples, and shows that "marrowskying" is not confined to the tongue, but occurs in writing. This is one of the many sources of error in copying printed or manuscript matter. The mind runs on ahead of the eye, and a jumble of syllables is the result. Should this by any chance happen to make sense, it leads to a corruption of the text which may have far-reaching consequences. Copyists' errors have been classified; it would be interesting if "marrowskyers'" blunders could also be classified and the etiology and mechanism of the condition elucidated. The occurrence of an accident of the kind engenders a fear of a repetition of the misadventure, which may lead a man to give up all attempts at public speaking.

RAG FLOCK REGULATIONS.

FOUR years ago inquiries were made on behalf of the Local Government Board by Dr. Reginald Farrar with respect to the manufacture and sale of unwashed rag flock, samples of which were examined bacteriologically by Professor Nuttall and Mr. Graham-Smith and chemically by Dr. F. C. Garrett, D.Sc. Mr. Cecil Warburton at the same time made an investigation into the possibility of vermin being distributed by means of this material. The reports of these investigators published in 1910 were very disquieting.[1] Dr. Farrar was able to show that the rags employed in the manufacture of the flock were of the lowest and cheapest grade, consisting generally of cast-off clothing and strips of old carpet, which might have been picked out from refuse heaps. From 70 to 90 per cent. of the flock was neither washed nor sterilized. Mr. Warburton found that lice and, *à fortiori*, their eggs,

[1] BRITISH MEDICAL JOURNAL, April 23rd, 1910, p. 1013.

might pass through the flock-making machine without being crushed, and that although the lice themselves were incapable of surviving more than three or four days without food, the eggs, which take a month or more to hatch, might quite possibly be found in bedding. One result of the disclosures made in these reports was the passing last session of the Rag Flock Act, which enables the Local Government Board to make regulations prescribing the standard of cleanliness which must be adopted for flock manufactured from rags. The Act comes into force on July 1st next, and after that date it will not be lawful for any person to sell or to have in his possession for sale rag flock which does not conform to such standard. The bacteriological examinations of rag flock which were made by Professor Nuttall and Mr. Graham-Smith led them to express the opinion that it was impracticable to set up a bacteriological standard of the purity of flock. Dr. Garrett was, however, more successful as regards a chemical standard, and he came to the conclusion that by estimating the amount of chlorine there would be little difficulty in discriminating between clean and dirty flocks. Dr. Farrar suggested that it would be reasonable to fix 30 parts of chlorine in 100,000 parts of flock as the permissible limit of impurity, and this is the standard which the Local Government Board has prescribed in the Regulations it has made under the provisions of the Act. The duty of administering the Act has been entrusted to the local sanitary authorities, the method of procedure following very closely that of the Food and Drugs Acts. The penalty for contravening the Act is for a first offence £10, and for a second or subsequent offence £50.

THE REMAINS OF NAPOLEON.

In the lives of saints it is often stated that the body was found incorrupt long after death. For instance, the body of St. Charles Borromeo, preserved in a crypt in the great cathedral of Milan, is shown to the curious—for a consideration. It is said to be incorrupt, but a very cursory inspection shows that it is mummified. In other cases the flesh of the holy person has been transformed into adipocere. It is a fact, however, that decay may be delayed sometimes for centuries by natural causes, and thus there are many cases of the bodies of persons who have no claim to a place in the Calendar being found incorrupt. In a recent number of the *Journal Médical de Bruxelles* there is an article by Dr. Max Billard on the exhumation of Napoleon's remains in 1840. Although, owing to the lack of the necessary materials, it had been impossible to embalm the body after death, the remains were found in an almost perfect state of preservation. They were enclosed within four coffins, one within the other, one of mahogany, one of lead, a second of mahogany and one of tin-plate. When the last of these was opened the whole body was seen as if enveloped in a transparent cloud. The head of the conqueror rested on a pillow. The large head with the lofty brow was seen covered with yellowish, hard, and very adherent integuments. The same condition was observed about the contour of the orbits, on the upper edge of which the eyebrows were visible. Under the eyelids could be seen the eyeballs, which had lost little of their volume and shape. Some hairs were still seen at the free edge of the eyelids. The bones of the nose and the integuments covering them were well preserved; the nostril and the alae alone had suffered. The cheeks were puffy; the integuments of that part of the face were remarkable by their softness and suppleness to the touch and the whiteness of their colour. Those of the chin were slightly bluish. The chin itself showed no change. The thin lips were parted; under the upper one, which was a little raised on the left side, were seen three extremely white incisor teeth. The hands showed no change; "the skin seemed to have preserved that particular colour which only belongs to that which has life." It is interesting to recall that among those present when the remains were brought back to Paris was an old man of 74, representing, among so many heroes of the sword, that war-surgery in which he had won such renown. This was Larrey, clad in his old uniform, and wrapped in his campaigning cloak, leaning on the arm of his son Hippolyte. To him it may be remembered Napoleon left £4,000 as to the most virtuous man he had known. The remains are now enclosed in five coffins, made respectively of tin-plate, mahogany, lead, a second one in lead separated from the other by sawdust and pieces of wood, and one of ebony. For a long time the face of Napoleon was shown every year on August 15th, the anniversary of his birth. Crowds passed before his tomb; the upper part of the coffin was raised, and through a glass could be seen the face of the Emperor. But it is to be presumed that at length signs of decomposition became visible, and the order was given that the face should no longer be shown. M. Jean Richepin, the poet, has described what he saw. In a lecture delivered on January 25th, 1909, he said: "The General (M. Mellinet, then Governor of the Invalides) took us down into the crypt. . . . My father took me in his arms, raised me in the air, and I saw the Emperor. I have never forgotten that sight. I was eleven years old. What is seen at that age makes a deep impression, and nothing can remove from my brain that extraordinary image: the eyes closed, the beard slightly grown, the face of the whiteness of marble, on which spread some yellow spots which seemed a bronze. When there mingle in my memory that face of wax, showing some signs of decomposition which I have seen, and those eyes which I have seen, I see the Emperor truly as if I had known him." Dr. Billard attributes the preservation of the remains during their long repose at St. Helena to the hermetic closure of the coffins in which they were enclosed, preventing the access of the micro-organisms—the real "conqueror worms," to use Edgar Allan Poe's phrase—that cause decomposition.

TABLES OF STATISTICAL ERROR.

MANY biological and medical investigators are now fully alive to the importance of applying some quantitative test of the accuracy attaching to the results obtained from limited samples. Thus, having ascertained from a sample of 500 leucocytes that 15 per cent. of them are large mononuclears, what is the likelihood that another sample of 200, found to contain 12 per cent. of large mononuclear cells comes from the same "population" as the first? Numerous other questions of a similar kind often require an answer, and although in the majority of cases the problem presents no difficulty to a trained statistician, the laboratory worker may be puzzled to lay his hand upon the correct solution. Inquiries of this kind would be much facilitated by the existence of a set of numerical tables with a clearly worded introduction, and this has been a long-felt want. Sir Ronald Ross and Mr. Walter Stott have recently done a good deal to smooth the path of the laboratory worker in this way, and their *Tables of Statistical Error*[1] should receive a general welcome. The tables, which are provided with adequate numerical examples, will be found very useful in answering questions similar to that proposed above, and the labour involved in their preparation can only be realized by those who have themselves attempted to construct tables. It is, however, necessary to remark that there are limits to the applicability of these tables. The authors write: "If the observed result, *plus* the error, exceeds 100, or if the observed result, *minus* the error, is less than 0, we conclude that the number of things hitherto examined is not large enough to yield a useful result." This is

[1] *Tables of Statistical Error.* By Professor Sir Ronald Ross, K.C.B., F.R.S., and Walter Stott. (Reprinted from the *Annals of Tropical Medicine and Parasitology*, V. 1911. Price 2s. 6d. Liverpool: The University Press.)

hardly a sufficient account of a difficulty which will arise if the tables are used in all cases. The entries seem to have been based upon the assumption that what is called the "normal curve of probability" describes the frequency of random errors. As a matter of fact, this assumption is not justified in cases where the character measured occurs in a very small or a very large proportion of the population. Roughly speaking, we should say that the values deduced from these tables cannot properly be employed in testing samples which yield less than 10 or more than 90 per cent. of a character; in such cases the frequency distribution of deviations on either side of the most probable value is not symmetrical. We believe that tables covering these extremes will shortly be published, and in any case the medical worker should be thankful for Sir Ronald Ross and Mr. Stott's useful publication.

THE POLLUTION OF SWIMMING BATHS.

AT a recent meeting of the Medical Officers of Schools Association a discussion on the pollution of swimming baths was introduced by Dr. J. Graham Forbes, who gave an account of investigations he had made in connexion with a small swimming bath at the London County Council Industrial School in Drury Lane. An examination of the water in the bath before and after it had been used resulted in evidence being forthcoming of definite pollution, the micro-organisms which were found after a few days' use, but which were absent in the fresh water, including *B. coli communis*, *B. pyocyaneus*, and *Streptococcus faecalis*. Several methods of purifying the water in swimming baths have been introduced, one of the best known being that which has been applied for the past three years to the five public baths in the metropolitan borough of Poplar. Dr. Alexander, the medical officer of health of the borough, has for some years used for disinfecting purposes an electrolytic disinfecting fluid containing hypochlorite of magnesia, and which is said to yield 4 to 6 grams of chlorine per litre. This fluid has been added to the water in the Poplar swimming baths, when they are first filled, and again at intervals of two or three days, until the baths are completely emptied. Bacteriological examination of the water has shown that the fluid has a very distinct germicidal effect, and it is maintained that the water, from its purification, is far pleasanter to bathe in, is clear and invigorating, and free from the unpleasant odour so often associated with public baths. There must obviously be difficulties in directly connecting either a single instance or outbreaks of disease with the water in swimming baths, though an outbreak of typhoid fever in the Royal Marine Dépôt at Walmer in 1908, and investigated on behalf of the Local Government Board by Dr. R. J. Reece, was most probably due to the water of the swimming bath having become infected with specific organisms. There is, however, quite sufficient evidence of the possibility of pollution of public bath waters to warrant the utmost care being taken to minimize the dangers arising from such pollution.

THE CARRIERS OF SLEEPING SICKNESS.

IN the JOURNAL of April 27th, 1912, p. 969, reference was made to the remarkable new results obtained by Drs. Kinghorn and Yorke in the course of their investigations on sleeping sickness in Nyasaland and Northern Rhodesia. These investigations have brought to light several facts which are of the most far-reaching importance. In our previous note we dealt more particularly with the game "reservoir" question. Here we wish to draw attention to the matter of the "carrier"—namely, the tsetse fly. For some years it has been an accepted doctrine that the only tsetse fly which carries the disease is *Glossina palpalis*. Kinghorn and Yorke, however, have demonstrated that in Northern Rhodesia the "carrier" is *Glossina morsitans*. In correlation with this fact it must be remembered that the strain of trypanosome causing infection in Rhodesia is different from *Trypanosoma gambiense*. The outstanding importance of this new discovery is that it appears to prove that a much vaster expanse of the African continent is open to infection than was previously believed. It was one of the few consolations in connexion with sleeping sickness in Uganda and the neighbouring regions that the carrier of the disease was such a species as *Glossina palpalis*, which is of markedly restricted distribution. The fact that this tsetse fly is confined to certain localities, and is rarely found at any great distance from water, gave a complexion of comparative simplicity to the problem of dealing with it. The entry of *Glossina morsitans* as a "carrier," however, places a much more serious aspect on the whole matter. Its distribution is very much wider than that of *Glossina palpalis*, and it is not handicapped by the necessity of living close to water. It is on that account a much more formidable transmitter of disease. The full significance of these new facts and their bearing on administrative measures have been discussed by Dr. Oylmer May, Principal Medical Officer of Northern Rhodesia, who, in an address delivered to the South African Branch of the British Medical Association at Johannesburg, gave a detailed account of the work of Kinghorn and Yorke and other members of the Sleeping Sickness Commission in Rhodesia. So far as known at present, there are only three affected areas in this region, namely, the shores of Lake Tanganyika, the banks of the river Luapula, and the Luangwa Valley. In the first two areas the "carrier" is *G. palpalis*, in the third *G. morsitans*. It was the occurrence of cases of the disease in this last-named district and the absence of *G. palpalis* which first drew attention to the necessity of incriminating some other "carrier." That *G. morsitans* has been found guilty accords with the views held by some authorities for some years past. It has been shown, further, by Kinghorn and Yorke that a single feed on an infected animal renders a fly infective, and that it remains infective all its life. An added source of danger is that infected animals may harbour the trypanosomes and yet show no signs of disease. The administrative problem has been rendered exceedingly more complex by these new findings. The difficulties of the situation are serious enough even in the case of *G. palpalis*, but there is no doubt that its evil influence has been materially arrested by the expedient of removing the population from the infected areas. In the Luangwa Valley, however, even this measure is denied us. The population there is comparatively large and difficult to handle; it would be an enormous task to transfer them all to positions of safety, and, moreover, they are not particularly anxious to be interfered with in such a manner. This measure, however, is being adopted to the modified extent to which it is practicable. We are again faced with the old question of destruction of game and destruction of flies. Dr. May is not one of those who favour the former measure. He sees more hope in the fact that the British South Africa Company is about to appoint a staff of expert entomologists to investigate the whole question, and to determine the manner best suited for dealing with and destroying the flies. With regard to the extension of the disease further south, a certain measure of safety is afforded by the Zambesi river. No sleeping sickness has yet occurred south of this, and stringent precautions are being taken to prevent infected persons crossing, and so spreading the disease.

HOSPITALS AND RELIEF COMMITTEES.

IN the *Charity Organization Review*[1] for June there appears an article by the almoner of St. Thomas's Hospital, entitled The Co-operation between Hospitals and Relief Committees, which is deserving of attention.

[1] London: Longmans, Green and Co.

It is an admirable summary of what is being done through voluntary workers to assist the deserving poor in various ways, and to promote the teaching of sanitary science among the masses. It shows how much can be done by sympathetic and intelligent health visitors to improve the condition of many of the sick and helpless poor by seeing that the advice of the medical men they have consulted is carried out in their homes as far as possible, and thereby rendering efficacious what otherwise would have been of little utility. Amid the hurry and rush of the out-patient department the sufferer is apt to be confused by the directions given by the consultant, often ignorant of his or her home conditions; and although, if regarded intelligently, they might often be conveniently modified by the patient to suit his or her particular case, unfortunately, it too often happens that the intelligence is lacking, and the advice is like the good seed that fell by the roadside. The health visitor supplies this intelligence, and points out to the patient how the advice may be utilized, and how by some little variation in the home life very considerable advantage may be obtained from it. But it is not all health visitors who can do this, and the almoner alludes to a class—we fear it is rather a numerous one—which makes all kinds of impossible suggestions, and whose members are satisfied and think their duty done, after inculcating a few well-recognized health laws, which, however good they may be in the abstract, are quite useless until their application to the concrete case in question has been explained. To cut the coat according to the cloth is a trite adage, and must never be forgotten by sanitary reformers when dealing with the homes of the poor. The writer speaks with some enthusiasm of the "system of social service" that has sprung up in our midst, and says that without its co-operation it would be impossible to attempt half the work that is now done. It is in this respect that so much has been gained. In the past there was a greater waste, but modern methods bid fair to check this regrettable loss of power. In the complexity of the present social system, co-ordination and co-operation are the key to progress, and we may well wish success to the work that is here so ably delineated. It is divided into two parts, (1) dealing with material relief, (2) the system of friendly visiting, and it is only by a combination of the two that really good results can be expected to be obtained. The illustrations given are simple and convincing, and we cordially commend the article to all interested in the welfare of the poor. There are many difficult problems to be faced in connexion with the subject, but it may be safely admitted that in following the lines here laid down, we are on sure ground. Whatever modification of our abstract views the future may bring about, whatever system in dealing with these problems may finally be adopted, work of this kind will always have its value, and will adjust itself to the practical carrying out of that which science and experience teach us is most desirable.

ERRORS IN OPHTHALMOSCOPIC DIAGNOSIS.

THE difficulty of making an exact diagnosis in many borderline cases by the use of the ophthalmoscope is familiar to everybody who is accustomed to employ that instrument. To determine whether the appearance of the optic discs in any given case is pathological, or is only some extreme degree of what may be found within the limits of the physiological, is by no means a rare experience for even the most expert ophthalmologist, even when he has the assistance afforded by the history of the case and by tests of the extent or acuity of the vision. In other words, the normal fundus oculi presents most variable pictures in different individuals, and may even be ophthalmoscopically indistinguishable from the diseased fundus. Professor Salzer of Munich has recently drawn attention once more to this well-known fact, describing in text[1] and pictures a number of the variations in the normal disc that may simulate such pathological states as optic neuritis or optic atrophy. His coloured pictures show very clearly how the colour of the optic disc, the sharpness of its margins, the prominence with which it stands out beyond the rest of the fundus, and the arrangement or tortuosity of its blood vessels, may simulate disease. Thus the healthy disc may be almost white, whether from deep physiological excavation or from other cause, giving the appearance of total optic atrophy. Professor Salzer leaves it uncertain how far this healthy pallor may be due to poverty in capillaries, to greater or less transparency of the non-medullated fibres of the optic nerve, to variations in the density of its neuroglia, or to the persistence of medullated fibres further forward in the papilla than is normal. He is of opinion that such terms as "pallor," "redness," and "temporal pallor of the papilla" should be employed with great reserve, except in cases that have been under observation for some time. In the same way he points out that a normal blurring of the edges of the disc, particularly by means of fine radiating streaks that seem to spread from its centre and are reflections from non-medullated nerve fibres, may be very hard to distinguish from a pathological blurring. And in some instances swelling of the disc may be closely imitated by the non-pathological projection forward of one of its vessels, the vessel being accompanied by the retinal elements in its vicinity. But it is when these variants in colour, margination, and projection are combined that the greatest difficulties in diagnosis are encountered, and neuritis may be suspected when nothing worse than pseudo-neuritis—the bark without the bite—is present.

[1] *Diagnose und Fehldiagnose von Gehirnerkrankungen aus der Papilla nervi optici.* Von Professor Dr. Fr. Salzer. Munich: J. F. Lehmann. 1911. (Roy. 8vo, pp. 18; 29 illus. M. 1.50.)

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE seventy-first annual meeting of the Medico-Psychological Association of Great Britain and Ireland will be held on Thursday and Friday, July 11th and 12th, at Gloucester, under the presidency of Dr. James Greig Soutar, Medical Superintendent of Barnwood House, Gloucester. The business meeting will be held in the morning of July 11th, when among other reports from committees one on the medical inspection of school children will be presented, and a proposal to elect as honorary members Dr. Thomas Ivor Considine, Superintendent of Lunatic Asylums, Ireland, and Dr. Henry Maudsley, will be made. After luncheon the President will deliver an address, and papers will be read by Dr. J. F. Briscoe on appendicitis in asylums, and by Dr. McKinley Reid on the bacteriology of diarrhoea, with special reference to asylum dysentery. The discussion on Dr. Bernard Hart's paper on a case of double personality will then be resumed. The annual dinner will take place that evening at the Guildhall. On Friday morning, a discussion on mental deficiency will be opened by Dr. Theo. Hyslop. On Wednesday, July 10th, when certain committees will meet, the Gloucester County Asylums (at Wotton and Barnwood) and Barnwood House will be open to inspection both morning and afternoon, and on Friday afternoon Dr. and Mrs. Soutar invite members to a garden party and pastoral play at Barnwood House. On Saturday excursions will be made to Berkeley Castle and Church.

AN EXHIBITION OF INSTRUMENTS AT THE COLLEGE OF SURGEONS OF ENGLAND.

THE Annual Show of additions to the Museum of the Royal College of Surgeons of England will be held on July 4th and 5th from 10 a.m. to 5 p.m., and on July 6th from 10 a.m. to 1 p.m. On this occasion a remarkable array of instruments will be on view. The first place must be given to a collection which has been presented by the executors of the late Lord Lister through the President, Sir Rickman Godlee. It comprises surgical

instruments, appliances used in early researches, records and tracings of experiments, drawings, and pathological specimens. The manuscripts of published papers and the clinical records which were bequeathed to the College are now in the library. A fine collection of obstetrical and gynaecological instruments, formerly the property of the Obstetrical Society of London, has been presented to the College by the Royal Society of Medicine. This collection includes a great part of the celebrated series exhibited at a conversazione held by the Obstetrical Society at the Royal College of Physicians in 1866. Some foreign pelvimeters of beautiful workmanship deserve inspection, but their actual utility seems questionable. The modern obstetrician will view almost with amusement the huge cephalotribes collected from foreign parts fifty years since. It was questioned then, even by Barnes and Braxton Hicks, whether British instruments were superior or inferior to the heavy weapons employed in feticidal operations abroad. The Obstetrical collection will be most instructive to the visitor to the Annual Show, as it marks what progress has been made since 1866, above all in Caesarean section. Most significantly, it will be on view side by side with the instruments actually employed by Lister.

BELL *v.* BASHFORD AND THE "BRITISH MEDICAL JOURNAL."

THE report of the trial of the action brought by Dr. Robert Bell against Dr. Bashford, Director of the Imperial Cancer Research Fund, and the British Medical Association is concluded in this issue. The summing-up of the Lord Chief Justice, the judge who tried the case, is published in full (page 1461) from the shorthand writers' notes. The jury found a verdict for the plaintiff, with damages of £2,000.

THE University of Liverpool will hold a special convocation on July 26th, during the Annual Meeting of the British Medical Association, at which honorary degrees will be conferred.

DR. C. J. MARTIN, F.R.S., Director of the Lister Institute of Preventive Medicine, London, has been elected an honorary member of the Royal Society of New South Wales.

A MEMORIAL service in honour of Robert Koch was recently held in a temple dedicated to him, which has been erected at Tokyo. The temple owes its origin to the pious care of Professor Kitasato. Among those present at the service were the widow of Robert Koch, the German Ambassador, and a number scientific men and Government officials.

IN order to facilitate the arrangements, it is very desirable that members intending to be present at the Annual Meeting at Liverpool should fill in and dispatch the form printed at page 607 of the SUPPLEMENT of June 8th. On the receipt of the form duly filled in, railway vouchers enabling members and their friends to travel to Liverpool and back at the rate of a single fare and a third will be supplied.

A BAZAAR in aid of the Hospital for Women and Children, Harrow Road, is to be held at the Knightsbridge Hotel on June 27th and 28th. The first day's proceedings will be opened by H.R.H. Princess Henry of Battenberg, who will receive purses presented by children, and the second day's proceedings by the Right Hon. the Lord Mayor of London. On each day the doors will be open from 2.30 p.m. to 10 p.m., the prices of admission at various hours ranging from 5s. to 1s. on the first day, and from 2s. 6d. to 1s. on the second day. The Chairman of the Committee of Organization is Mr. Ernest Lane.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

Thirteenth Meeting.

THE thirteenth meeting of the State Sickness Insurance Committee was held on June 12th.

Mr. T. JENNER VERRALL was in the chair, and the members present were: *England and Wales:* Dr. R. M. Beaton (London), Dr. John Brown (Bacup), Dr. T. M. Carter (Westbury-on-Trym), Dr. R. E. Howell (Middlesbrough), Dr. S. Hodgson (Salford), Miss Frances Ivens, M.S. (Liverpool), Dr. Constance E. Long (London), Mr. James Neal (Birmingham), Dr. F. H. Oldham (Morecambe), Dr. James Pearse (Trowbridge), Dr. E. O. Price (Bangor), Dr. Lauriston E. Shaw (London), Dr. W. Johnson Smyth (Bournemouth), Dr. D. G. Thomson (Thorpe, Norfolk), Dr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Dr. A. H. Williams (Harrow on the Hill), Mr. D. J. Williams (Llanelly), Mr. E. H. Willock (Croydon). *Scotland:* Dr. J. Adams (Glasgow), Dr. Bruce Goff (Bothwell), Dr. R. McKenzie Johnston (Edinburgh), Dr. J. Munro Moir (Inverness). *Ireland:* Dr. Mark Cahill (Belfast), Dr. J. S. Darling (Lurgan). *Ex Officio:* Dr. J. A. Macdonald (Chairman of Council), Dr. E. J. Maclean (Chairman of Representative Meetings), Dr. E. Rayner (Treasurer).

A part of the proceedings of this meeting, including the interview which the Committee had, as a deputation, with the Chancellor of the Exchequer and the Insurance Commissioners, was reported in the JOURNAL of June 15th, p. 1384 et seq.

We are enabled to publish the following account of the remaining proceedings in anticipation of the confirmation of the minutes.

The minutes of the last meeting of the Committee, held on June 7th, 1912, were confirmed, and signed by the Chairman as correct.

SUBCOMMITTEE OF ADVISORY COMMITTEE FOR DRAFT REGULATIONS.

The Chairman reported that at the meeting of the Advisory Committee the previous day it had been suggested that a small medical subcommittee, consisting of, say, ten members, half to be appointed from the medical members of the Advisory Committee selected by the Commissioners and half from the members of that Committee appointed by the Association, should be appointed to assist the Commissioners in the actual drafting of regulations, and that he understood that such subcommittee would commence its work after the results of the recent meeting of the medical section of the Advisory Committee had been considered by the Advisory Committee as a whole.

The Committee resolved as follows:

> That the following members be suggested to the Insurance Commissioners for appointment upon any subcommittee of the Advisory Committee appointed to assist the Commissioners in drafting regulations under the Act: The Chairman (Mr. Verrall), Dr. R. M. Beaton, Mr. James Neal, Dr. D. F. Todd, Mr. E. B. Turner.

INCOME LIMIT.

In the course of a discussion which took place during the meeting of the Committee before the deputation that day, it was agreed that if necessary the following elaboration of the Association's demands with regard to the income limit should be placed before the Commissioners:

> The claim is that whenever an Insurance Committee shall make arrangements with medical practitioners to provide insured persons with ordinary medical attendance at a specified capitation grant per annum, or at a fixed rate per visit, notice shall be given to each insured person that his right to participate in the arrangements made on his behalf by the Insurance Committee is liable, at any time, after due notice, to be withdrawn, should he, if called upon to do so, fail to make a declaration carrying penalties under the Act which satisfies the Committee that his average income from all sources does not exceed £104 per annum or such lower sum as may be agreed upon between the Insurance Committee and the local Medical Committee, and that if such right be withdrawn the insured person will, in lieu thereof, receive from the Committee to assist him in making private arrangements for

his medical attendance a sum of money equal to that which would have been expended to secure his medical attendance in the ordinary way.

The Insurance Committee shall call upon any insured person to make declaration that his income is below the agreed limit when requested to do so by the Medical Committee or by any person to whom the right of challenge is given.

PROVISIONAL MEDICAL COMMITTEES.

It was reported that 191 provisional medical committees had been formed, being an increase of three since the last meeting of the Committee.

EXAMINATION OF CANDIDATES FOR APPROVED SOCIETIES.

A communication was received from a provisional medical committee asking the two following questions, to both of which the Committee resolved to reply in the negative:

1. An approved society desires to retain one's services for admission of candidates. If the member, who has signed the pledge, consents to do so, for a fee, paid by the Society, is he violating his pledge?
2. An applicant for admission to an approved society presents himself for examination to a member who has signed the pledge, with the distinct intimation that he desires to join an approved society. If the member examines him, gives him a certificate of health and accepts a fee from the applicant, is he violating his pledge?

SANATORIUM BENEFIT.

The position of practitioners in respect of the administration of sanatorium benefit was raised by inquiries received, and it was resolved:

That, in view of Minute 78 of the Special Representative Meeting, February, 1912, no medical appointments be accepted for the administration of sanatorium benefit until such time as the minimum demands of the profession are conceded.

It was resolved to call the attention of the secretaries of Divisions and provisional medical committees to the above resolution, and also to the resolution adopted by the Committee on June 7th with reference to medical practitioners serving on provisional insurance committees. The resolution pointed out that the Committee had informed the Insurance Commissioners that, acting under the decisions of the Special Representative Meeting of February, 1912, it was impossible for the Association to assist the Commissioners by obtaining through their provisional medical committees the names of representatives for the suggested provisional insurance committees until such time as the Association was satisfied that the minimum demands of the profession in regard to the Act are, or will be, conceded, and added that, so far as practitioners are concerned, who are members of county or county borough councils, and who are appointed by their councils *qua* members to fill positions which could equally well be filled by laymen, and not *qua* medical practitioners to fill positions which could only be filled by medical practitioners, the Committee raises no objection to the acceptance of such appointments.

At a later part of the meeting—namely, after the interview with the Chancellor of the Exchequer—the question of the administration of sanatorium benefit and the relation thereto of Minute 78 of the Special Representative Meeting of February, 1912, was again discussed, and the Committee resolved as follows:

That the Insurance Commissioners be asked whether the Association may expect shortly to learn the arrangements that are proposed to be made with regard to sanatorium benefit.

That the Insurance Commissioners be asked whether there is any possibility of the date at which the sanatorium benefit will come into force being postponed in order that the arrangements proposed may be considered by the Representative Meeting of the Association on July 19th next and the following days.

SCOTTISH MEDICAL INSURANCE COUNCIL.

A communication from the Colliery and Public Works Surgeons Committee of the Scottish Medical Insurance Council having been read, the Committee expressed its appreciation of the fact that the Scottish Medical Insurance Council was working in harmony with the Association in the matter of the signing of the supplementary pledge and the handing in of resignations to the Provisional Medical Committees by holders of colliery and works appointments.

PLEDGE BY MEMBERS OF HOSPITAL STAFFS.

A communication was read from the Honorary Secretary of the Leicester and Rutland Division stating that the local infirmary staff had unanimously agreed to sign the following pledge, which was not exactly the same as that issued by the Committee, the local profession having modified it so as to strengthen the position of their Public Medical Service.

We, the undersigned, individually and severally hereby place in the hands of the Secretary of the Leicestershire and Rutland Public Medical Service our resignation (to take effect on the 31st December, 1912, or such earliest date thereafter as the same can be lawfully terminated) of all club, friendly society, dispensary, and other forms of contributory contract appointments which we hold, and we authorize him on behalf of each and every of us to give notice of such resignations respectively or to tender such resignations respectively on behalf of each and every of us to the bodies concerned, if and when he is called upon by the Public Medical Service Central Committee to do so. We also undertake not to accept any appointment so resigned, and we will not render any professional service on a contract basis to persons who come within the wage limit laid down by the respective Subdivision Committees of the Leicestershire and Rutland Public Medical Service except on terms approved by the respective Subdivision Committees in the said counties.

After that portion of the National Insurance Act referring to medical benefit comes into operation, and until the terms and conditions of administering medical benefit under the Insurance Act have been approved by the profession, we will not, except in cases of urgent necessity, render professional services to an insured person through any medical charity unless he be a subscriber to the Leicestershire and Rutland Medical Service, or be receiving medical attendance privately on terms approved by the said service; and we will not co-operate with any member of the profession who is under contract to render service to insured persons upon terms which are not approved by the profession.

The Committee resolved to inform the Division that it was of the opinion that the pledge issued by the Association was such as was most applicable to the whole country.

NEXT MEETING.

The meeting adjourned at 9.15 p.m., having resolved to meet again on Thursday, June 20th, at 10.30 a.m.

Medical Notes in Parliament.

The Insurance Act.

Postponement Proposed in the House of Lords.

THERE was quite an interesting debate in the Lords last week, when Lord Heneage moved:

That it is most essential, in the interests of all those affected by its provisions as well as of the taxpayers and ratepayers of England, that the operation of the Act should be postponed by a Privy Council Order under the powers given in the Act until January 1st, 1913, in order to give sufficient time to the official Commissioners to understand and explain its provisions, and, if necessary, to suggest such amendments as will render the Act workable and really beneficial as a scheme of national insurance.

He appealed to the Government to give his resolution their friendly consideration. The first list of approved societies was only published on Friday last, no terms had yet been made to the medical men, and only last week a circular was sent to all the county councils asking them for their regulations with regard to sanatoriums. Although only about a month intervened before the date fixed for the Act to come into operation, nothing had yet been decided with regard to medical and sanatorium benefit, and he was satisfied that in the interest of the Act itself and of the system of national insurance, the date of its coming into operation should be postponed.

Lord Camperdown, who seconded the motion, said that it seemed to him that the bill was being brought into operation absolutely regardless of cost. He doubted if the Chancellor of the Exchequer cared what it would cost if he could bring it into operation on July 15th, that he might go about and point to an enormous benefit given to the people.

Lord St. Audreys supported the motion in consequence of the confusion as to the intentions of the bill in the

minds of the farmers, agricultural labourers, and rural residents.

The Marquess of Crewe said that the Government, far from objecting to this discussion, welcomed it, because they recognized that there did exist, particularly in the remoter parts of the country, uncertainty as to the actual provisions of the Act, and still more perhaps as to what was going to happen when it came into operation. He also fully recognized that the attitude of noble lords opposite was not one of hostility or fundamental objection to the Act as an Act. The ideal of noble lords opposite was that the measure should not come into operation until everything was cut and dried, until everything, in fact, in relation to the Act was comprehended by practically everybody concerned. The view of the Government, however, was that that was an impossible manner in which to deal with a measure of this kind. Their view was that this measure was one to which it was necessary to apply the principle of *solvitur ambulando;* that it was only in that way that it would be possible by the discovery of error to bring such an Act into full and complete operation in this country, in which the people's main dread was of being bureau-ridden. On the question of delay, the argument of the Government was that even if they postponed the coming into operation of the Act they would not be able to bring the process of explanation and information home until the Act was actually in operation. When the Act was actually in operation the public interest would be increased to a large and almost a surprising extent. He fully admitted the difficulties which attached to the dissemination of information, and particularly in the rural districts. Speaking generally, he could not believe that the Government would be wrong in starting the machinery in the manner proposed. It was inseparable from a great measure of this kind, involving so much novelty in principle and detail, and affecting hundreds and thousands of people not accustomed to study details closely, that there should be some confusion as to details; but he remained unconvinced that that state of things would be at all bettered by a postponement for three, or even six, months to an extent which would outweigh the inconvenience which must necessarily result from postponement.

The Marquis of Lansdowne said, in reply, that it was not insisted that everything should be cut and dried before the Act came into operation. He might well believe that there were points and difficulties unsolved when the Act came into operation, but the desire was to emerge from the region of chaos and confusion. The noble marquess had suggested the method of *solvitur ambulando*. But suppose they ambled into a quagmire. Was he quite sure that these experiments *in corpore vili* might not result in very great hardship and injustice to a number of people. The fact was that the successful operation of the Act depended on a vast network of machinery of any extraordinarily delicate character; and it had been shown that that machinery, far from being ready to be set in motion at an early date, was out of gear and incomplete. The House of Commons lately passed without a division a resolution that the Act would fail to afford the medical benefits until the co-operation of the doctors was assured. Were the Government in a position to hold out any hope that the co-operation of the doctors had been secured? The doctors had been alternately cajoled and intimidated, but, so far as he had been able to observe, neither the cajolery nor the intimidation had been successful in driving them away from their point. It would be interesting to know whether, supposing His Majesty's Ministers were not able to come to terms with the doctors, they had in view any other plan for obtaining the assistance of the medical profession. Was it their intention to bring in the "strike breakers" for the purpose?

The Lord Chancellor (Lord Haldane), who was received with cheers, said that no one who had listened to the debate could regret that it had taken place. It had given evidence of interest in, and study of, the subject, and had brought out points of difficulty to be made clear. The present issue was whether it would not be better to postpone bringing the Act into operation. There were good reasons against postponement. He was well aware of the difficulties, well aware of the time taken, but he reminded the House that the object had been to work the Act through existing societies, and to postpone the coming into operation would injure the societies in a very serious way, a number of them were already dropping off, and they would regard postponement as a great evil. People could not learn to swim without going into the water, and one of the advantages of bringing the Act into early operation was this—that they would all learn to swim. The Government thoroughly realized the position as regarded the doctors, and the extreme desirability of carrying them with them in a cordial spirit, and of enlisting their co-operation in this great experiment; but in view of the delicate negotiations that were going on, he thought it was undesirable that he should say more on the subject at present.

The motion was then negatived without a division.

Sanatorium Grant (Ireland).—Sir John Lonsdale asked whether the sanatorium grant under the National Insurance Act would be allocated among the counties in Ireland on a basis of population; and whether, if grants under the Act were applied for by voluntary associations to be used for the establishment of sanatoriums or other purposes for any of the counties in Ireland, the councils of those counties would be consulted by the Local Government Board before such grants are recommended to the Treasury? Mr. Birrell: While any exceptional incidence of tuberculosis and economic differences might be taken into account as modifying factors, population would be the primary basis of distribution of the grant by the Local Government Board between the several county areas in Ireland. The circular issued by the Local Government Board to secretaries of county councils and town clerks on May 20th stated that the Local Government Board would notify to each county council any applications for grants by voluntary associations for the service of that county. Mr. Birrell, in answer to further questions, said an application had been received from the Women's National Health Association for a Government grant from the sums at the disposal of the Insurance Commissioners for this particular subject. That grant had been most favourably acceded to by the Treasury. Assent had been given to a sum to be placed at the disposal of the association under the Local Government Board's supervision.

The Mental Deficiency Bill.

Mr. McKenna, in moving the second reading of this measure, said he could not hope to get the second reading of this bill with such unanimity as the last, because on this subject the flag of individual liberty had been raised, but he hoped to be able to convince his hon. friends that the provisions of this bill would not assail any of the accepted principles of individual liberty. The bill would not interfere with the individual liberty of the subject in the case of the feeble-minded any more than we already interfered with that liberty now. Under the existing law, when we clapped the feeble-minded into prison, when we put them into workhouses, and when we taught the children in special schools we interfered with the individual liberty of the feeble-minded person. Unfortunately we interfered with that liberty in the wrong way. The feeble-minded person ought not to be dealt with in prison for an offence which was no more than the offence of being feeble-minded, and he ought not to be treated in the workhouse, because his case was one in which workhouse treatment was no good to him. But treatment in a suitable home, if it did not cure him, would give him a prospect of leading a fairly honourable life. A man was not sent to the homes in perpetuity. A feeble-minded person was only sent to a home after being committed by a Court of Summary Jurisdiction. A medical certificate had to be obtained and the right of appeal was given. He would be prepared to consider any criticism on that part of the bill in Committee. The majority of the cases which would be dealt with under the bill would be those of persons who were now sent to lunatic asylums or kept in workhouses. They were only providing an appropriate method of dealing with persons who were now dealt with most inappropriately. There had been considerable criticism of the bill on account of the definition of defective persons. Most of these critics had evidently not read the whole of the definition. Clause 17 provided that the persons subject to be dealt with under the Act should be persons who were defectives and were

found to be wandering about neglected or cruelly treated, or who were charged with the commission of any offence or were undergoing imprisonment or penal servitude or detention in a place of detention or a reformatory or industrial school, or an inebriate reformatory, or who were habitual drunkards, or in whose case it was desirable in the interests of the community that they should be deprived of the opportunity of procreating children. This, he admitted, was a particularly debatable point to be more closely examined in Committee. The clause was also to apply to persons in whose case such other circumstances existed as might be specified in any order made by the Secretary of State. That also was a case which the House would naturally wish to examine very closely in Committee. Compulsion was undoubtedly an element of the bill. The first compulsion in the bill was compulsion on the local authority to make an investigation relative to the feeble-minded persons within its area, and to provide for them. There was a limitation, however. There was no compulsion on the local authorities to provide and maintain homes for feeble-minded persons beyond such number as that for which the State contributed. The power was given to the local authority to provide for all the feeble-minded within their area, but they were under no compulsion to exercise that power if their means did not allow. In order to start the local authorities' work it was proposed that there should be a payment from the Exchequer of £150,000 a year. There would no doubt be economies in respect of people taken out of the workhouses, lunatic asylums, and prisons. It must also be borne in mind that to a considerable extent the feeble-minded homes would be self-supporting. He was therefore not without hope that while the grant of £150,000 would not cover the whole ground, it would be sufficient to enable the local authorities to make a substantial start in the work which lay before them. The local authorities were to act through a committee of their own, and were bound to appoint medical and other officers to assist them in carrying out the Act. They must keep a register of the defectives within their districts, and provide accommodation for those requiring custody. Power was given to the Secretary of State to establish and maintain prisons for dangerous criminals.

Sir P. Magnus: Can the right hon. gentleman explain the chief differences between this bill and the private member's bill the second reading of which was passed recently?

Mr. McKenna said that the difference was that this bill threw compulsion on the local authority to inquire into the feeble-minded within its area, to keep a register of them, and provide accommodation subject to the limitation of the amount of money provided by the State. In the private member's bill there were no compulsory powers or means of meeting the cost. They proposed to set up a body of Commissioners who would be the Commissioners for the Feeble-minded, very much on the same lines as the Prison Commissioners were the Commissioners for dealing with all questions of prisoners and prison treatment. The bill had been limited to the actual needs of the case, and he thought it provided all the necessary securities against unjustifiable interference with individual liberty, against any measure which would shock or even go far in advance of instructed public opinion.

After critical speeches from Mr. Leslie Scott and Mr. Wedgwood the bill was read a second time. It consists of 68 clauses.[1]

Vivisection.—Sir P. Magnus asked the Home Secretary whether his attention had been called to a shop in Piccadilly and to one recently opened in Oxford Street, in which were exhibited stuffed animals tied down for an imaginary operation and suggesting that animals were tortured by vivisection; and whether, having regard to the congestion of passenger traffic due to the nature of such exhibits and the bad effects thereby produced on sensitive and uninformed people, he would take steps to prevent the public display of such shows. Mr. McKenna said: My attention has been drawn to these shops, but the police report that they have not caused any congestion of traffic. I regret that I have no power to prevent such displays. The persons responsible for them can only damage their cause by adopting methods which are calculated to spread the false belief that in this country cutting operations are allowed to be performed on animals without anaesthetics. The recent report of the Royal Commission condemned this method of propaganda. Mr. Chancellor asked the Home Secretary whether it was not a fact that these illustrations were illustrations of actual experiments; that the instruments shown were themselves for sale; and that the illustrations were taken from medical publications? Mr. McKenna: I understand that my hon. friend was in conflict with the report of the Royal Commission on the subject. I can only remind him that the whole of the circumstances were carefully considered by the Commission, and that they reported against this particular form of propaganda. Mr. Chancellor further asked the Home Secretary whether, although the Cruelty to Animals Act, 1876, purported to protect animals from suffering through vivisectional experiments, persons licensed under the Act were allowed to hold certificates enabling them to perform experiments without anaesthetics and to keep animals alive after the effects of the anaesthetic had passed off; and whether his attention had been called to the statement made before the Royal Commission by Sir William Byrne, of the Home Office, that the framework of the Act was to lay down a number of very strict conditions and then to allow all except three to be removed by certificate; and whether, under these circumstances, he could see his way to introduce legislation dealing with this state of affairs. Mr. McKenna said the Act provided for the grant of the special certificates referred to, but the scope and operation of these certificates could not conveniently be stated within the limits of an answer in the House. They were fully described in the report of the Royal Commission, and it was, he believed, well known that vivisection in the sense of cutting operations without anaesthetics was not allowed in this country. He was aware of the statement quoted, and could only repeat what he said in reply to a recent question, that all the recommendations of the Royal Commission were being carefully considered.

Work in Potteries (Lead and Dust).—Mr. Noel Buxton asked the Secretary of State for the Home Department whether any fresh action had been taken to put into force the proposed rules for the regulation of work in potteries in respect of lead and dust; and whether he was aware that nearly two years had elapsed since the report of the Departmental Committee was issued. Mr. McKenna said that, as he had stated in reply to a question on April 30th, he had arranged for the objections which had been received to the proposed rules to be discussed in conference between the chairman of the Departmental Committee and the objectors, with a view, if possible, to arriving at a settlement without the holding of a formal inquiry. Conferences for this purpose were now proceeding. He was aware that two years had elapsed since the Committee presented its report, and he had already explained in his previous reply, and also in a reply to the hon. member for Durham on December 8th last, why it had not been possible to bring the proposed rules into operation more speedily.

Hospitals and Telephone Service.—Mr. Stuart Wortley asked the Postmaster-General whether it was the practice of the National Telephone Company to grant to hospitals specially favourable terms in the form of reduced rates; whether, since the transfer to the State, these favourable terms had been in all or any cases withdrawn; and, if so, whether it was intended to persist in such withdrawal. Captain Norton said that the National Telephone Company came to the conclusion that such reductions ought not to be allowed and they began to discontinue the practice some years ago. At the time of the transfer the hospitals generally were paying for their services at public tariff rates, but a small proportion were still receiving reductions which were now being discontinued. A general obligation was imposed upon the Postmaster-General by statute not to show favour or preference; and this obligation precluded preferences such as those mentioned, and required him to provide telephone services on uniform terms as telegraph and postal services were provided.

[1] See BRITISH MEDICAL JOURNAL, May 25th, p. 1193.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LIVERPOOL AND DISTRICT.

Joint Sanatorium.

At a meeting of the St. Helens Health Committee on June 12th proposals in connexion with the erection of a joint sanatorium were discussed. The committee confirmed the minutes of the conference of representatives of Bootle, St. Helens, Warrington, Leigh, Widnes, and Hindley, held on June 3rd, when it was resolved that these towns, together with Southport, Wigan, and all the towns and authorities in South Lancashire, should consider a scheme for the formation of a joint committee under the National Insurance Act for the erection and maintenance of a sanatorium for curable cases of tuberculosis with one bed per 5,000 population, provided that the authorities representing a population of 500,000 were willing to co-operate, and that the application be made to the Local Government Board for a grant of at least four-fifths of the cost. The committee also resolved to establish a tuberculosis dispensary, provided that the income be assured, and that the Local Government Board be asked for a grant of at least four-fifths of the cost of provision and equipment.

Medical Institutions at West Kirby.

The Lord Mayor (Earl of Derby) paid a visit on June 12th to the West Kirby Convalescent Home. During his visit he was informed that his horse Steadfast had won the Royal Stakes. He at once intimated that £50 of the prize money should go to the convalescent home. As a donation of £25 qualifies for life membership, Lord and Lady Derby were both elected life members. He also visited the Children's Convalescent Home, West Kirby. In the afternoon Lord Derby formally opened the King Edward Memorial Ward at the Hoylake and West Kirby Cottage Hospital. The Hoylake and West Kirby District Nursing Committee was formed about twelve years ago, and at the end of 1905 a house was taken on lease and equipped as a temporary hospital. As time went on these premises were found inadequate. Appeals were made to the residents, and the present hospital was built and opened in June, 1910, and has accommodation for 16 beds. During the four years ending December last 397 persons have been treated as in-patients, while the district nurse has attended 922 patients. Lord Derby unveiled a bronze plaque as a memorial to King Edward, and remarked that no better memorial to the late King Edward could be desired, and that the convalescent home was the best he had ever seen.

Breast Feeding of Infants.

The annual report of the Medical Officer of Health of Bootle (Dr. W. Allen Daley) states that the estimated population at the middle of 1911 was 70,100. The rate of increase during the last decade was only 16 per cent., compared with 20.7 per cent. in the previous intercensal period. Hence the population in the intervening years was over-estimated. The death-rate was equivalent to 18.3 of the population; when corrected for age and sex distribution was 20.2. The infantile mortality-rate was 145 per 1,000 births. Despite the high atmospheric temperature of the third quarter of the year, the infantile mortality from diarrhoea and enteritis was less than recorded in previous years with similar weather conditions. He attributed this to the work of two lady superintendents, who visited the children of the poor below the age of 12 months, distributing leaflets, and giving advice as to the feeding of children. He paid tribute to the work of the Bootle Health Society—a voluntary association of ladies of the town, who visit necessitous cases, and provide nourishment when required for both mother and child.

An interesting feature is the contrast between Mersey ward and Knowsley ward, the former being in a congested area occupied by the poorest inhabitants of the borough, while the latter is residential, and contains the largest houses in the town. The death-rate in Mersey ward from diarrhoea was 14 per cent. below the mean, whilst in Knowsley ward it was 44 per cent. above the mean. This was due to the fact that although the inhabitants are poorer than in Knowsley ward, yet in the former a larger portion of the infants are "breast-fed." The percentage at the age of 6 months fed entirely from the breast was 78 in Mersey ward and 53 in Knowsley ward. The infantile mortality in Mersey ward was proportionately high from marasmus and wasting diseases, and from measles and whooping-cough. Some of the deaths from marasmus and atrophy could probably have been prevented with greater care in feeding the infants. The instruction given to school girls on infant management had proved valuable. The lady inspectors also give instructions to mothers on the subject. The number of cases of scarlet fever and the deaths from it in 1911 were the lowest in the records of the borough. The type of the disease was very mild, and a mortality of 2 or 3 per cent. prevailed, compared with one of 10 or 12 per cent. some twenty years ago. Efficient control of mild cases of the disease had proved difficult. Symptoms in some were almost trivial, and the danger lay in the fact that from the mild cases the debilitated child might become infected with a severe form of the disease.

MANCHESTER AND DISTRICT.

Discussion on Dental Clinics.

The annual meeting of the North Midland Branch of the British Dental Association commenced its sittings in Manchester on June 14th. The new president, Mr. W. Simms, of Manchester, in his address, after a short historical reference to the position of dentists at the present time compared with 1879, when the British Dental Association was first formed, passed on to consider the present condition of the teeth of the race. A comparison of the teeth of civilized races with those in the skulls of primitive races was all in favour of the uncivilized, and recent investigations, especially into the state of school children's teeth, revealed a condition of dental decay which called for the serious attention of all who take an interest in the physical well-being of the race. The examinations by school medical officers were admittedly imperfect, but they showed defective teeth in 40 per cent. of the children examined, and a more thorough examination by dentists gave results much in excess of this. Of 10,500 English and Scottish boys and girls, 86 per cent. had carious teeth, while at Halifax the percentage was 95, at Birmingham 94.7, and at the Cambridge dental clinic 96.5 per cent. had carious teeth. Examination of children at Eccles near Manchester fully confirmed these figures, and he calculated that in Manchester, with an elementary school population of about 120,000, it would be safe to say that a thorough examination would reveal some such condition as the following: Number of teeth hopelessly decayed and needing extraction 180,000; number that require filling 240,000; irregularities in need of dental treatment 6,000. Mr. Simms went on to urge the need of dental clinics, as the poverty of many of the parents made it impossible to expect any substantial alleviation from the voluntary efforts of parents, and any effectual benefit must come from the provision of treatment clinics. It was found that a dentist working whole time could attend to not more than 3,000 children a year, at a cost, including materials and service, of between £450 and £500. The chief objection in Manchester had been on the ground of the expense; the State had shown its sympathy with the formation of dental and medical clinics by a grant of £60,000, and he felt sure that if once wealthy citizens realized the value of the work, they would come forward and by paying the initial cost of the necessary appliances of these clinics, which, in regard to dentistry, is estimated at about £50 each, commence a work which is of national importance.

Mr. Campion read a paper on the organization of dental clinics, and said that at present there were different opinions as to whether dental and medical treatment should be carried on at the same clinic or separately, but the tendency was in favour of associating the two. Clinics had already been established under 30 education authorities, in some cases by the authority and in others by voluntary agencies. Of these, 5 were for dental treatment only, 8 for combined medical and dental, and 17 for medical treatment only. He urged numerous objections against the children being referred for dental treatment to hospitals which cannot fulfil the requirements necessary in the case

of elementary school children. The initial cost of treatment would be heavy, and the accumulated work of years of neglect could only be grappled with by an expenditure out of the reach of any education authority if it were proposed to deal with all the children at once. It would be necessary to take only certain ages at first, and taking the figures of the Cambridge clinic, he thought that the average cost per child was less than 2s., though for considerably less than this a large amount of treatment could be carried out of the greatest value to the children.

After some discussion the President suggested that a subcommittee should be appointed to draw up a tentative scheme for the consideration of the Manchester Education Committee.

In the evening the annual dinner was held at the Midland Hotel.

BIRMINGHAM.

THE BIRMINGHAM HOSPITAL SATURDAY FUND.

LAST year the amount raised was £21,940, and this year the committee are aiming at £22,500, a sum which there seems every reason to hope will be obtained. On the first day of receiving the contributions, which was Saturday, June 15th, £15,885 was paid into the bank, as compared with £15,862 twelve months ago. On the first day the contributors included 1,242 firms, as against 1,366 on the corresponding day last year, and the committee interpret this to mean that many contributions have been delayed. Out of twenty-two firms which have helped the fund to the extent of £100 this year, seventeen have sent in increased amounts. Altogether about 2,200 firms contribute to the fund. The past year has not been quite normal, and strikes, national and local, have affected the collections; the sum sent by one local firm is £71 below the amount paid in last year.

The Birmingham Hospital Saturday Fund has now reached its fortieth anniversary. It has contributed annually £10,000 to the funds of twenty-six hospitals, dispensaries, and nursing societies in the city, and has maintained convalescent homes—Tyn-y-Coed for men, Marle Hall for women, and the Red House, Great Barr, for children. Last year 3,432 patients enjoyed the privilege of treatment in these homes. It is expected that in the autumn the Hospital Saturday Home for Consumptives—the Sir William Cook Memorial—on Romsley Hill, will be opened to receive patients. It is sincerely hoped that the Insurance Act will not have a detrimental effect upon the fund. The honorary secretary, Mr. W. S. Aston, refuses to believe that the workers of the city will discontinue their support of the hospitals of the city and of their own convalescent homes. In a recently published pamphlet he points out the following reasons why the working men should continue their contributions: (1) Birmingham hospitals must still be supported from the fund, inasmuch as the new insurance contribution does not provide for hospital treatment, even for workers, who will be insured for medical attendance and medicine. (2) The Insurance Act makes no provision at present for convalescent home treatment even for workers who are insured, while the Birmingham Hospital Saturday Convalescent Homes treat 3,500 patients annually. (3) The proposed Government sanatoriums cannot be in working order for some time yet, whereas the Hospital Saturday "Home" for Consumptives will be ready in the autumn of the present year.

MEMORIAL TO THE LATE MR. F. V. MILWARD.

On June 14th, at the General Hospital, Birmingham, the dedication plate of a bed was unveiled by Mrs. Victor Milward and Mrs. F. V. Milward to the memory of the late Mr. Frederic Victor Milward, F.R.C.S., who was assistant surgeon to the hospital at the time of his death in March, 1910. Mr. John Henry Lloyd (deputy chairman of the House Committee) expressed in the name of the Board of Management and of the House Committee the gratitude and appreciation of the gift of £1,250 for the dedication of the bed by the wife and other members of the family of the late Mr. F. V. Milward. There were also present Mr. Gilbert Barling, Mr. F. S. Goodwin, Mr. W. F. Haslam, Mr. John Lowry, Mr. and Mrs. H. Milward, Miss Milward, Sir Robert Simon, Mr. B. B. Tilley, Dr. Thomas Wilson, and Mr. Howard Collins, House Governor.

LONDON.

LONDON COUNTY COUNCIL.

Reorganization of School Medical Staff.

THE Education Committee of the London County Council had before it on June 19th a long report as to the revised arrangements for medical inspection and treatment and care of children necessary in order to earn a share of the grant of £60,000 promised by the Board of Education towards the cost of these services. The General Purposes Subcommittee stated that in order to carry out the Board's requirements as to reinspection and re-examination it was essential that the staff of school doctors should be reorganized without delay. At present only in East London was systematic re-examination of all the children found defective on medical inspection carried out; in the rest of London the proportion of available time spent on routine inspection was too great to allow the existing quarter time staff to re-examine all the defective cases. The Board also required a complete system of records to be kept. If the children attended hospitals and centres with which the Council had an agreement, complete information was available, and if treatment was obtained from private doctors, dispensaries, and hospitals not included in the Council's scheme, the latest form of "following-up" card would make it possible to keep a complete record. Re-examination, as carried on in the East End, must be extended to the whole of London, and by extending the full-time system of engaging medical assistance, the additional work could be carried out without any considerable increase in cost in respect of staff. The experience obtained in East London showed that one full-time doctor could inspect between 8,000 and 8,500 children a year, and also reinspect each term all the children found defective in the previous term. There were at present for routine inspection 80 quarter-time and 6 full-time doctors. On the assumption that the number of children to be inspected annually was 250,000, 30 full-time doctors would be required for the whole of London. The subcommittee was of opinion, however, that the appointment of the 24 additional full-time officers required should not be permanent; that 12 of the appointments should be for five years (at salaries of £400, rising by annual increments of £25 to £500 a year); and that 12 should be for one year at £400 a year. For the purpose of supervision it was proposed that London should be divided into four divisions, and that an assistant medical officer should be attached to each. Various rearrangements of existing posts and duties would be required, and the proposals of the subcommittee as summarized were:

1. The present 80 quarter-time school doctors should be replaced as from August 25th, 1912, by 12 full-time school doctors appointed for five years, and 12 for one year.
2. The three permanent school doctors in the public health department appointed in December, 1911, should be placed on a scale of salary rising to £500 a year.
3. Four temporary quarter-time school doctors should be employed for one year each at a salary of £120.
4. The equivalent of two-and-a-half additional assistant medical officers should be appointed as divisional officers at a salary of £500 each, rising by £25 yearly to £600.
5. The salary of Dr. E. E. Argles, assistant medical officer, should be increased to £500, rising by £25 yearly to £600.
6. The equivalent of two additional full-time assistant medical officers should be appointed at a salary of £400 for work in connexion with institutions for higher education.

The merits of whole-time and part-time appointments were discussed at some length, and ultimately the committee decided to amend the first recommendation to provide that five full-time doctors be appointed permanently and nineteen full-time doctors be appointed on a yearly agreement. All the other recommendations were approved.

National Insurance Act.

At a meeting of the Council on June 18th Mr. Kingsley Wood asked the chairman of the General Purposes Committee whether, inasmuch as sanatorium benefit under the National Insurance Act would begin on July 15th, and that the Chairman of the Insurance Commission stated at a meeting of the County Councils Association that county councils were under a virtual obligation to see that some sanatorium accommodation was available immediately, any steps had been taken in the matter. Mr. Greenwood replied that a communication asking the county councils to take the matter into consideration forthwith had been addressed by the Local Government Board to all county

councils except that of London. The Public Health Committee was collecting information on the subject.

The Council is entitled to sixteen representatives on the Insurance Committee for London, and will, in addition, select as members three medical practitioners. At the invitation of the Insurance Commission the Council on June 18th appointed fourteen members to a provisional committee for London and two medical members—Sir John Collie, M.D., and Sir Shirley Murphy, F.R.C.S.

BRISTOL.

THE PROVISIONAL INSURANCE COMMITTEE FOR THE CITY.

THE first skirmish of the Insurance campaign took place on June 11th at the meeting of the City Council. One of the members brought forward a motion to appoint the representatives to the proposed Provisional Insurance Committee, and brought forward the names of eight gentlemen and two ladies. The Committee will finally consist of fifty persons. The contest of the Labour party to obtain more representation need not be noticed, except to call attention to its failure, all their candidates being defeated. Incidentally, one member made a violent attack on the tyranny of the doctors' union, no doubt feeling sore at the successful action of the Branch in preventing any one accepting an advertised post at an inadequate salary. What may be particularly emphasized was the election on the Committee of Dr. Prowse, Senior Physician of the Royal Infirmary, not only without his consent, but even without approaching him on the matter. Such an action does not reflect much credit on the City Council, for it was admitted at the meeting by the member who proposed the composition of the Committee that he had been warned that no medical man in Bristol was prepared, under the present circumstances, to work under the Act. This was clearly put by Dr. Devis, a member of the council and Chairman of the Bristol Branch. On the following day appeared a letter in the local press to say that Dr. Prowse was not willing to accept any position under the Insurance Act. Since then no further action appears to have been taken.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

POST-GRADUATE TEACHING IN EDINBURGH.

IN addition to the general and surgical courses in September and the course on internal medicine in August, there has been arranged this year a course on diseases and defects of children suited for medical inspectors of school children and others. The place of meeting in the forenoons will be the Royal Hospital for Sick Children, where medical, surgical, and out-patient clinics will be held. In the Royal Infirmary clinics will be held in the skin department, at the ear, nose, and throat department, the eye department, and the dental department. Meetings for practice in anthropometric methods will take place on the Saturday forenoons in the anatomy department of the university. Clinics on mental defects of children will be held in the Institution for the education of Imbecile Children at Larbert. Eight lectures upon physical defects of children, methods of medical inspection, etc., will be given in the afternoons at the Royal Hospital for Sick Children. The course will begin on Monday, July 15th, and last for two weeks. The fee is five guineas. Entries must be made on or before July 1st. Full particulars can be obtained on application to the Secretary, University New Buildings.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

TRINITY COLLEGE BICENTENARY.

THERE is every reason to expect that the celebrations in connexion with the bicentenary of the Trinity College Medical School will prove a great success. In addition to delegates from practically all the medical faculties in Great Britain, a very large number of foreign universities are sending delegates, including Bonn, Bordeaux, Christiania, Copenhagen, Geneva, Ghent, Groningen, Helsingfors, Liège, Moscow, Paris, St. Petersburg, Stockholm, Tomsk, Upsala, Utrecht, Kyoto, Tokyo, Lahore, Calcutta, Cairo, and several of the colonies, in addition to many of the most famous medical schools in America. The following programme has been drawn up:

Thursday, July 4th.—Afternoon: Reception of guests in College Library by the Chancellor and Provost. Evening: Graduates' Dinner.

Friday, July 5th.—Morning: Unveiling of memorial stone to Dr. Stearne by the Provost. Address on Dr. Stearne by the Rev. J. P. Mahaffy, C.V.O. Reception of addresses in the Examination Hall by the Chancellor and Provost. Afternoon: Garden party. Evening: Dramatic performance by the members of the Trinity College Amateur Dramatic Club. Ball.

Saturday, July 6th.—Morning: Visit to the Medical School. Procession to the Royal College of Physicians and Reception by the President. Special Commencements, with conferring of honorary degrees. Afternoon: Garden party in the Fellows' Garden.

As the invitations for the various functions are now being compiled, it is hoped that medical graduates who have not already notified to the honorary secretaries of the Graduates Committee their intention to be present will do so without delay, in order to avoid disappointment. A special letter has been sent to this effect to all graduates whose address could be found. The graduates' dinner is to be held in the Mansion House, by kind permission of the Lord Mayor; there will be accommodation for about 400 diners.

The Court of Directors of the Apothecaries' Hall of Ireland have decided on presenting a congratulatory address to the College on the completion of the second century of its existence. The Governor, Dr. E. Magennis, has been appointed to represent the Court of Directors, and the interesting event will take place during the ceremonies which are fixed for the last three days of Trinity week, commencing July 24th.

IRISH MEDICAL ASSOCIATION.

The seventy-third annual meeting of the members of the Irish Medical Association was held on June 12th in the hall of the Royal College of Surgeons, Dublin; Dr. J. Cotter, was the outgoing President, in the chair, and there was a large attendance of members. According to the report of the Council, read by the Secretary, the membership on December 31st, 1911, numbered 577. Thirty-eight names of members, who owed three or more years' subscriptions, were removed from the register. The report stated that the Conjoint Committee, appointed at the meeting held in Cork, was unanimously of opinion that if the National Insurance Act applied to Ireland, it should apply in its entirety.

Dr. R. H. Woods, who was elected President, spoke in his address of the abuses and anomalies of the Irish Poor Law Service. He said that through the efforts of the Association between four and five hundred medical officers had had their salaries increased by an average of £40 per annum. Speaking of the Insurance Act, he said it would be their duty, in the public interest as well as their own, to see that the additional medical benefits were administered through the Insurance Committee. He suggested that the abuses of the Poor Law service should be allowed to occupy a secondary place for the present, for while the Home Rule Bill was on the table of the House of Commons they were only beating the air in trying to move Parliament to alter existing Irish laws. They should, therefore, expend their energies on the working of the Insurance Act, when every effort they made would have a sure and certain result.

Dr. J. Donnelly (Dublin) said that though more than half the unions of Ireland had adopted graded salaries, yet in unions where private practice was small there was no grading. He proposed the following resolution, which was adopted:

(*a*) That as more than half the unions in Ireland have now fixed graded scales of salaries for their medical officers, the time has come to ask the Local Government Board to use their power of fixing salaries, to insist that those unions which have refused to grant graded scales of salaries should give reasonable increases in each case. (*b*) That as the Local Government (1898) Act only secured superannuation for a limited number of existing offices, and that as a great many are now in even a worse position owing to the changes inevitable under the Insurance Act, we deem it necessary that the Government be asked to extend without delay Section 118 of the Local Government (1898) Act, so as to include all existing officers, as was primarily intended.

Dr. Kinkead (Galway) proposed the following resolution, which was adopted:

> That the Council be instructed to use every effort to secure the insertion in the bill for the better government of Ireland provisions securing superannuation for existing prison medical officers and other medical civil servants not at present included in the bill.

In the evening the annual dinner was held in the Board Room of the Royal College of Surgeons, at which Dr. Woods presided. On the following evening Their Excellencies the Lord Lieutenant and the Countess of Aberdeen gave a party at the Castle to meet the members of the Association, and on Friday Dr. and Mrs. Woods invited the members to an afternoon garden party at Killiney, co. Dublin.

Tipperary Doctors and the Insurance Act.

The medical practitioners of the South Riding of Tipperary held a meeting in the Town Hall, Clonmel, recently to consider their position under the Insurance Act. It was decided to instruct Dr. Power, the local representative on the Central Advisory Committee, to urge on the Insurance Commissioners the importance of granting a suitable capitation fee to medical men for giving certificates to persons insured under the Act, and the determination of the profession not to accept an inadequate fee for such services. The following pledge was signed by all the doctors present, and it is understood that this pledge has been, or is immediately about to be, signed by every medical man in Tipperary South Riding:

> I hereby undertake that I will not accept any club or other contract medical practice or position except upon such terms as shall be approved by the County Medical Committee representing the entire profession of that county.

This is practically the same pledge as was recently signed by the medical men of North Tipperary.

Ulster Medical Society.

The annual meeting of this society was held on June 6th in the Medical Institute, Belfast. The President, Dr. McKisack, occupied the chair. Colonel G. Davis, I.M.S., was elected a Fellow. The Treasurer, Librarian, and Secretary presented their reports, which as amended were adopted. Resolutions of condolence on the deaths of Dr. R. C. Parke, of Newtownards, and Dr. H. Whitaker, of Belfast, were passed and copies ordered to be sent to their friends. On the motion of Dr. Calwell, seconded by Mr. Fullerton, Dr. R. W. Leslie (Strandtown) was unanimously elected President for the ensuing year. The following other officers were then elected: *Vice-Presidents*, Mr. A. B. Mitchell and Dr. J. Huston (Carrickfergus); *Council*, Dr. A. G. Robb, Mr. R. J. Johnstone, Dr. J. S. Morrow, Dr. V. Fielden, Mr. Howard Stevenson, and Mr. W. McLorinan; *Treasurer*, Dr. J. Rusk; *Librarian*, Dr. W. L. Storey; *Secretary*, Dr. J. C. Rankin; *Editorial Secretary*, Mr. S. T. Irwin.

Cork District Lunatic Asylum.

At the monthly meeting of the Committee of Management of the Cork Asylum, held on June 17th, the question whether officers, including medical officers, should be granted 10s. a week in lieu of rations while on annual holidays was discussed. It was decided to grant the subordinate staff 7s. 6d. while on holidays, but the officers, including doctors, should receive no money in lieu of rations on holidays.

The board next took up the recommendation that the four assistant medical officers be requested to give lectures and act as tutors to the male and female staff, to enable them to qualify for the Medico-Psychological Certificate, and that each member of the assistant medical staff receive a sum of £12 10s. per annum for such services, the number of lectures for such purpose to be not less than 100 per annum. A deputation of the medical staff appeared before the board and stated their case, that the delivery of these lectures was not included in the terms of their appointments, and that they were doing it through courtesy. The Psychological Association had altered the conditions of its examination, and it was now much harder and much stricter. They did not see their way to give the required instruction without remuneration, such as the superintendent got for delivering lectures at the University College. In the discussion it was stated that it was unusual in other asylums to pay medical officers for this work. On a poll being taken, 10 voted against the proposal, while 3 voted for it.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

The Reorganization of the Sanitary Service in India.

The decision to retain the Sanitary Commissioner with the Government of India, while placing him under the head of the Medical Service, has been quickly followed by an important resolution of the Supreme Government laying down the lines on which it is proposed to organize and extend the sanitary department. The essential features of the new departures are to increase the number of whole-time sanitary medical officers, and at the same time to decentralize by giving more powers to the local governments in the control of this class of official. In order to carry out the first desideratum, at a time when all increase in the Indian Medical Service is strictly tabooed by the Secretary of State for India, the field of recruitment is to be widened by throwing open the higher posts to fully qualified Indians of proved aptitude, and who possess either an English or an Indian university Diploma in Public Health. This step is necessary, as it is already very difficult to get Indian Medical Service officers to enter the sanitary department, in which they have to give up all private practice, and to spend most of their time in touring and inspection duty. Eight new appointments are to be added to the grade of Deputy Sanitary Commissioner, two to go to each of the provinces of Madras, the United Provinces, and Bengal, and two which were to have gone to Eastern Bengal and Assam, one of which will now probably be allotted to Assam, which is at present without a special malaria officer. The selection of the candidates for these important posts will be left with the local governments, subject to the conditions that they are taken from the list of accepted candidates for the Sanitary Department, who must hold a Diploma of Public Health. A liberal scale of pay is laid down for non-Indian Medical Service men appointed (who will not be allowed private practice), beginning with 500 rupees a month and rising to 1,000 rupees. The first appointments will be made on probation for not less than two years, but this period may be dispensed with in the case of men who have rendered approved service as municipal officers of health.

In addition to the substantial increase in the number of deputy sanitary commissioners, the present scheme also provides for the appointment of whole-time health officers for the larger municipalities, who will be graded in two classes. Those of the first class will be required to have a British or Indian Diploma in Public Heath, as soon as arrangements can be made for Indians to be trained in their country to become first class health officers. For those of the second class the main qualifications will be a good general education supplemented by a course of training in public heath approved by the local government. The pay of the first class will be from 300 rupees to 500 rupees, and of the second grade from 150 rupees to 300 rupees. The provincial governments will be left to see that duly qualified men are appointed and reasonable security of tenure is ensured. In order to assist the local governments in establishing the new posts an annual subsidy will be granted where necessary, *plus* half the cost of the municipal health officers, the balance to be found by the local authorities. The Government of India also thinks that a service of trained sanitary inspectors should be organized in municipalities, as was some time ago successfully done in Madras by Colonel King, I.M.S., when he was Sanitary Commissioner of that Presidency.

Lastly, the resolution deals with provincial sanitary boards, the constitution of which is to be left to the local governments to determine, their functions being mainly to advise regarding the more important and expensive schemes, such as those of water supply and drainage. Altogether the new departures mark an important advance in sanitation in India, which should lead to much-needed improvement in the conditions of the large cities of India and at the same time open up a useful field of employment in Indian medical graduates.

Major J. C. Robertson, I.M.S., the newly-appointed Sanitary Commissioner with the Government of India, took over charge of his office on May 15th.

Special Correspondence.

PARIS.

A Muscular Reflex in Meningitis.—Absence of Recurrence after Operations for Sarcoma.—Congenital Bradycardia.—Corneal Grafts.

DR. GUILLAIN has described a muscular reflex which, he says, is present in all cases of cerebro-spinal meningitis, and in some cases of meningitis from other causes. If the patient lies in bed with both legs extended, and the examiner grasps the quadriceps femoris of one leg between his thumb and fingers, and thus pinches the muscles, there results a reflex action of the other leg, the thigh being flexed towards the abdomen. This reflex is present in both legs, and is quite independent of the condition of the tendinous and superficial reflexes. When the case is about to end fatally this reflex disappears. If the case is progressing favourably and other signs of meningitis disappear, this collateral reflex decreases gradually, and disappears as the temperature returns to normal. Dr. Guillain considers that this reflex may be useful in the diagnosis of doubtful cases.

At a recent meeting of the Surgical Society of Paris M. Schwartz showed a patient on whom he had performed resection of the femur for a myelogenous sarcoma some eighteen years ago, and in whom no signs of recurrence had ever been manifest. The shortening of the leg amounted to about 6 or 7 cm., but, apart from some slight limp, the patient was well and strong. M. Auvray reported two cases of sarcoma of the lower jaw, which had been operated upon with no signs of recurrence, and M. Delbet reported on six patients on whom he had operated for sarcoma of the long bones, in each case with perfect cure and no recurrence.

Dr. Camille Lian read an interesting paper on congenital bradycardia at a recent meeting of the Paris Hospital Medical Society. He recognizes two forms of congenital bradycardia: the one due to a dissociation of the ventricles and auricles, the second described as total bradycardia. When the Stokes-Adams symptom-complex is present Dr. Lian regards the case as grave; nervous complications may occur about the fourth year of age. In such cases a lesion is found in the bundle of His and occasionally congenital malformation of the heart. In the cases coming under the heading of "complete congenital bradycardia" the prognosis is favourable and no curtailment to life is to be expected.

M. Majetot has reported a case in which he had used a corneal graft from an eye enucleated for disease, but in which the cornea was healthy. The cornea of the patient who received the graft was opaque, as the result of a burn from quicklime. M. Majetot made a small window and transplanted the corneal graft, which became attached to the opaque portion of the patient's cornea. The grafting of the cornea is not a new idea, as Dr. Wolff, then of the Glasgow Ophthalmic Institution, many years ago grafted a portion of cornea. Where M. Majetot has made advance is in the fact that he did not use fresh cornea, but cornea which he had preserved in human haemolized serum for a period of fifteen days. The cornea was kept in this serum, and the temperature of the serum was maintained at between + 4° and + 7°.

BERLIN.

Prevention of Infant Mortality.—Notification of Tuberculosis.—Central Medical Library.

THE abnormally hot summer of last year caused a very high mortality of infants. In Germany there died in the three months July to September about 30,000 more than in the previous year at the same period. In most of these cases gastro-intestinal diseases were the cause of death. The authorities of the Berlin Kaiserin Augusta Victoria Haus have now issued a pamphlet and a popular *Hitze Merkblatt* on the prophylactic precautions which should be taken. In short, clear sentences, the necessity for: (1) Judicious feeding: (2) the prevention of overclothing; (3) sufficient ventilation of rooms is insisted on, and attention is drawn to the easy decomposition of milk; advice is given how to preserve it by boiling and keeping it cool, and it is pointed cut that mother's milk is preferable.

Among the suburbs of Berlin, Charlottenburg is prominent by its sanitary and social hygienic arrangements. It is fortunate in possessing in the well-known hygienist and medical statist, Dr. Gottstein, an authority in the department of hygiene, while even Berlin does not yet possess an "Stadtmedizinalrath" (official medical adviser). Dr. Gottstein has been commissioned by the magistrate of Charlottenburg to write a pamphlet on the "Introduction of Compulsory Notification of Tuberculosis of the Lungs and the Larynx." The Armendirection (guardians of the poor) of Charlottenburg was one of the first in Germany to draw attention to the necessity of early notification of cases of tuberculosis, and in 1897 requested medical men, Krankenkassen (sick funds), and nursing homes to give information of all cases of tuberculosis to the "Städtische Fürsorgestelle für Lungenkranke" (local board for lung diseases). The Prussian Diet had at the time refused to make the notification of tuberculosis compulsory. As legal regulations on this subject do not exist, Dr. Gottstein suggests that those towns which can afford to take sufficient care of their patients, as in the case of Charlottenburg, should proceed independently. Although for some years a decrease in the mortality from tuberculosis has been observed, this fact being due chiefly to improved sanitary arrangements, tuberculosis is still among the diseases which claim most victims. As there is not much hope for an early change or amplification of the existing legal regulations, the Denkschrift requests the Preussische Städtetag to use its influence to declare valid the suggested compulsory notification of tuberculosis in such cities as Charlottenburg.

The statement as to the Central Medical Library in Berlin[1] requires some amendment. The originator of the scheme was not Dr. Hans Kohn but the eminent Berlin physician and Director of the Kaiserin Augusta Hospital, Geheimrath Professor Ewald, who in 1909, when librarian of the Berliner Medicinische Gesellschaft, had taken the initial step towards centralization; all that has been done since by others is the outcome of Ewald's suggestions. An entirely satisfactory result, however, is only to be expected if the Rudolph Virchow Haus, which has been planned for some time, should provide room for the books.

Correspondence.

TEACHING IN SECONDARY SCHOOLS FOR THE PRELIMINARY SCIENCE EXAMINATIONS.

SIR,—The report in the JOURNAL scarcely represents the full grounds of the objection raised in the General Medical Council against the above. Some of us believe that the rapid advance of physiology, pathology, and practical medicine demands a fuller acquaintance with certain departments of chemistry, biology, and physics than our students at present obtain. We believe that these earlier subjects will need in the future to be specialized. A knowledge of organic and biological chemistry is becoming essential, and unfortunately these departments are barely touched upon in many of the courses delivered at present, while, on the other hand, branches of chemistry, which have little or no relation to medicine, are included and fully dealt with. Likewise in biology, study of the structure and life-history of parasites and disease-bearing animals and insects, and of bacteria, bacilli, moulds, and ferments, is a fundamental necessity. The ordinary systematic study of animal and vegetable types and their classification, though of interest, has less practical value to the student of medicine. In physics the principles of faradic and constant electric currents, currents of high frequency, *x* rays, ionism and diathermics, with the principles of heat, light and sound, ought to be thoroughly comprehended.

The medical curriculum is exacting and lengthy, commonly occupying more than the required five years. It should, in my view, be lightened by the omission of all that is unnecessary. In fact a remodelling of preliminary science studies and examinations is yearly becoming more

[1] BRITISH MEDICAL JOURNAL, June 8th, p. 1335.

and more needful. Thirty years' experience as a teacher in earlier and later subjects of the curriculum has made me fully convinced of this need, and I confess sympathy with first-year students when they complain of work and examinations which stand in no direct relation to later studies and to their future work as medical men. Various medical schools and examining bodies are already modifying the teaching of elementary science with these views, with excellent results, and I hope all will eventually do so. The general courses of chemistry, biology, and physics given at our great public schools are good in most cases, but they are not, and cannot be, specialized in they way I have suggested. If, however, their teaching could be regarded as merely preparatory, leading up to more specialized teaching later, the value of such instruction would be great. It would not be reasonable to expect secondary schools to supply the special knowledge bearing on medicine which needs to be imparted, and which, I believe will be required in the future, for the preliminary science examinations in medicine. Therefore, to relegate this teaching to them seems to me an error. The difficulties of the advanced teacher are considerable at the present time in consequence of the insufficient preparation of the student in those departments of science which bear specially on, and ought to lead up to, his advanced studies. I am one of those who believe that if we give our students the right training there is a wonderful future before medicine.—I am, etc.,

Liverpool, June 18th. RICHARD CATON.

MEDICAL PRELIMINARIES FOR LONDON STUDENTS.

SIR,—To parents about to enter their sons for the medical profession the question as to what preliminary examination should be taken is a matter of importance, as much unnecessary time may be spent in school work. If one turns to the prospectuses of the various London hospitals no mention is made of the Medical Preliminary of the Educational Institute of Scotland (held in London), which seems to me to fulfil the requirements of the ordinary school boy intending going in for medicine. The old examination held by the College of Surgeons was conducted much on the lines of the Preliminary above mentioned, and why this was relinquished I never could quite understand.

The College of Preceptors is much vaunted in the prospectuses of the London schools, but it must be obvious to those who have gone into the matter that the standard required by this college is equal to a University Matriculation, and at the same time none of the universities recognize it, even as part of their entrance examination. It is essentially a preliminary for the Conjoint Board, so are the Junior Locals. Why, therefore, should a student waste his time on a higher Arts Examination when the lower ones allow registration and an earlier start in his medical work?

It is well understood that the larger majority of medical students in London take the diploma of the Conjoint Board, a smaller percentage proceeding for a university degree in addition.

I may state, I believe, without any detriment to other medical schools and hospitals, that London has the finest material for training in the British Isles. This being admitted, why is it that so few proceed to the London University degree? The examinations in medical subjects are in every way fair and not outside the pale of the average student. Is it the London Matriculation which acts as a stumbling block? If so, there are other entrances which can be taken in lieu thereof if passed at one and the same examination. These are numerous, and may be briefly summed up as follows:

1. Scottish school leaving certificates.
2. Senior Locals, higher certificates, and school certificates of Oxford and Cambridge.
3. Joint Matriculation Board, or school leaving certificate of Manchester, Liverpool, Leeds, and Sheffield.
4. Senior certificate of Intermediate Examination Board of Ireland.
5. School leaving certificate of University of London.

Responsions of Oxford or the Previous of Cambridge are of course interchangeable with London, but a man who has passed one of these is hardly likely to go in for the London degree.

A rule is in force at the Durham University whereby a student who has passed a preliminary registrable by the General Medical Council may, by passing in three additional subjects, obtain the university Matriculation. If with this object Latin, elementary physics, and chemistry be taken, two of the subjects of the medical curriculum may be made use of. A further advantage of this university is that with one year's residence the First and Second M.B. will take the place of the corresponding examinations of the Conjoint Board.—I am, etc.,

Coventry, May 28th. EDWARD PHILLIPS, M.B.Durh.

OPERATIONS FOR GLAUCOMA.

SIR,—I have not the advantage of seeing the *Ophthalmoscope*, and therefore had it not been for the paragraph in your issue of June 15th of this year I would not have been aware of Mr. Temple Smith's paper. May I say at once that the operation which he seems to call mine is performed by me only occasionally, and that the operation he assigns to Colonel Elliot is the operation which I performed in the autumn of 1909 and still do perform on suitable occasions? The best description of my 1909 operation is that to be found in the recent edition of Sir Henry Swanzy's textbook, where he erroneously attributes it to Colonel Elliot. I have not given up that operation, but sometimes still employ it. Further, I think Colonel Elliot has very frankly admitted my priority in the matter. The facts of the case are briefly these: In the autumn of 1909 I was much interested in the accounts which we received of Professor Lagrange's operation and in the controversy which he was conducting with Charles Abadie. It seemed to me, however, that Lagrange's operation involved a certain changing of instruments, and that the same thing might be more rapidly effected if a flap of conjunctiva were dissected up, laid over the cornea, and a trephine used as near the corneal margins as possible. That was the operation which I introduced into ophthalmic practice in the autumn of 1909, and is one which I still employ.

The records of that operation are to be found in the hospital journals. I made no publication of it, for the simple reason that in dealing with so very grave a condition as glaucoma there can be nothing worse than publication till you know precisely the ground on which you stand. Established practice ought not to be upset, except on a very sure basis of clinical observation. That favourite device, the usual "preliminary note," is, in so serious a matter as glaucoma, thoroughly wrong and unjustifiable. I was therefore much surprised in March or April, 1910, to receive a very courteous letter from Mr. Sydney Stephenson asking me to come to the Oxford meeting of 1910 and demonstrate my glaucoma operation. I was at a loss to know how he, living in London, got to hear of it. In a letter with which he favoured me, he said he learnt of my operation from one of my Edinburgh friends. I had made no communication to anybody, except to my personal assistants, but apparently some of my friends in Edinburgh had heard of it, probably from some colleagues who had visited the Eye Infirmary in Glasgow and the Royal Infirmary in Edinburgh. Be that as it may, I was requested to operate at the Oxford meeting in the summer of 1910, and I availed myself of that invitation. If my recollection is right, the patient on whom I operated there was one of those whom I thought proper to treat by cyclo-dialysis. An event of that kind showed me that although I myself had said nothing about the operation it was tolerably well known in other towns.

It certainly was known in London and in Edinburgh before it was known here, for I had Mr. Sydney Stephenson's invitation to operate, he having heard of the operation, not from any publication by myself but from some colleague in Edinburgh. Colonel Elliot happened to be in Great Britain in the spring of 1910. He did not return to Madras till the summer of 1910, and, so far as I am informed, did not begin this operation till his return home in the autumn of 1910. These being the facts, it would appear that I used this operation nearly a year before Colonel Elliot did.

This is not the time to enter into a discussion of the operation with and without cyclo-dialysis. I hope, perhaps on an early occasion, to discuss in some detail the various substitutes for iridectomy, which still is to me the standard operation.—I am, etc.,

Glasgow, June 17th. FREELAND FERGUS.

APPENDICITIS—AND QUICKNESS.

SIR,—In reply to Mr. Morton I would say that it is both unwise and unnecessary to operate on all cases of acute appendicitis within the first twelve hours, and that this procedure should be reserved for those severe cases whose clinical symptoms put them on a par with the gastric ulcer that has perforated direct into the general peritoneal cavity—a class of case that forms a very small minority of acute appendix cases, but quite recognizable when they occur. In my experience, if we are not unduly apprehensive, there is not such a difficulty as Mr. Morton would have us believe in diagnosing clinically the cases of acute appendicitis that may be left alone.

The point, however, in Mr. Morton's letter that I wish to specially emphasize is that I do not consider an abscess in connexion with a well walled-in appendix should be immediately dealt with. In fact, this is the point that I am directly opposed to, because I hold that it is the interference with this form of appendicular suppuration that is at the root not only of the heavy mortality in operations for acute appendicitis, but also of the slow convalescence, with recurring abscesses, of many of those who do recover. I do suggest, and most emphatically, that limited "abscesses around the appendix had better be left alone" until they have had an opportunity of being absorbed or their pus losing its virulence. If Mr. Morton will read my lecture as published in the *Lancet* for May 11th, 1912, he will find there my reasons for this course of action. Mr. Morton says, "We have to take the risks and deal with them." I can assure him this is not the correct position of matters. The risks to the patients of leaving them for a time are small compared with those that we create by immediately dealing with them, for the danger is not to the peritoneum that has been packed off, but to that portion of it that must be in the field of operation and that too often suffers. I do not agree with Mr. Morton that "the risk of spread of infection is very small." On the contrary, the condition of the local tissues in the early days of an attack of appendicitis is such that it is very great, and that it is so the heavy mortality in operations for acute appendicitis is, in my opinion, a confirmation.

The fact is that this whole question of acute *localized* intraperitoneal abscesses connected with the appendix and their treatment requires more consideration than it has had, and it is not on a satisfactory basis at present. When Mr. Morton says that such cases of localized suppuration "will be dangerously ill from spreading peritonitis or toxic poisoning," I can assure him that that has not been my clinical experience, but the very reverse, and I have found that such cases can be safely left for two or three weeks, during which the pus will either absorb or lose its virulence, thus allowing the cases to be operated on with the safety of that "interval period" which has given in the hands of all surgeons such satisfactory results.—I am, etc.,

Glasgow, June 16th. GEORGE THOS. BEATSON.

SIR,—In your issue of June 8th Sir George Beatson comments on some statements in my recent letter. Incidentally he asks what is meant by "immediate operation." By "immediate operation" I mean operation as soon as the diagnosis is made.

Sir George says "that if the expression implies that operation should be done within twelve hours of the onset of the attack, he has no fault to find with that line of action." Why twelve hours? It seems to me that these time limits are illogical, misleading, and out of place in surgical practice. I agree that if the operation be done within twelve hours so much the better, but if it is not done within twelve hours, surely it is better to do it within twenty-four, forty-eight, or more hours, rather than to take the risks incidental to delay.

Sir George asks if I have ascertained the proportion of deaths following operation in the 1,500 deaths which occur annually. I have not, nor do I think it is germane to my argument. My point is that had an operation been performed early the vast majority of these deaths would not occur. Sir George says he is satisfied that many of "the deaths from acute appendicitis are due to operation at the wrong time." I agree, because I maintain that every postponed operation is an operation "at the wrong time," and that the right time is as soon as the diagnosis is made. Were this principle acted on, little would be heard of deaths from appendicitis. Sir George Beatson says "that modern surgical treatment has not won the triumphs it ought to have done to justify interference in every stage of an acute case of this ailment." I venture to think that the great reduction in the mortality in neglected cases of acute appendicitis which have progressed to general peritonitis is one of the greatest triumphs of modern surgery. Whereas formerly one expected to lose two out of every three cases of diffuse spreading peritonitis, now one is disappointed if one loses more than one in eight. Sir George Beatson gives statistics showing a death-rate of 3.3 per cent., but if only the acute cases in his series are considered the death-rate is 5.9 per cent., which I maintain is far higher than the death-rate for acute appendicitis ought to be. I would refer to the splendid results obtained by Murphy, Hotchkiss, Morris, Deaver, and others in America. I do not hold with making a fetish of statistics, but may I say that in my own practice, since I have adopted the principle of operating on every acute case, my death-rate has been exactly 5 per cent., and in all the fatal cases there was diffuse peritonitis at the time of operation? If interval operations during the same period are included, the mortality-rate is 3.1 per cent. I am confident that had I followed Sir George Beatson's teaching, my death-rate would have been far higher.

Sir George Beatson compares his results with those of his colleagues. The practice as to allotment of cases differs so much at various hospitals that it would be interesting to know whether an equal proportion of emergency cases are admitted under his care. His statistics rather suggest the contrary. I notice that in his 151 acute cases there were only 8 cases of general suppurative peritonitis. This in my experience is a very low proportion. In my own series, in 20 per cent. of the cases, diffuse peritonitis was present on admission.

Sir George Beatson, in his recent lecture, implied that in the majority of cases of acute appendicitis the diseased member is walled off by plastic adhesions. This I regard as a hoary and venerable superstition, and I believe I shall be supported in saying that it is contrary to the experience of operating surgeons. In a really acute case of appendicitis limiting adhesions are more often conspicuous by their absence.

I think it is to be regretted that Sir George Beatson gives support to the dangerous teaching of "judging cases of acute appendicitis on their merits." The risk to life involved in acting on this principle is at once apparent if we consider what it implies. To carry it out with safety the surgeon must be able to picture to himself what is going on within the abdomen. This I maintain to be impossible even by the most experienced and skilful clinician. I have not yet met with any one who, when challenged, has claimed this prescience. Will Sir George answer the question, Can he or can he not judge accurately the condition of the appendix in a given case, and foretell the future course of the disease, whether resolution will occur or whether gangrene with general peritonitis will ensue? Nothing short of such insight and prophetic talent can justify procrastination in a case of acute appendicitis.—I am, etc.,

London, W., June 14th. HERBERT J. PATERSON.

SIR,—The discussion on when to operate in acute appendicitis illustrates the two different views which unfortunately still exist in the profession on this important matter. One view is expounded in the letter of Dr. Dixon and is supported by Sir George Beatson. It is briefly that of "judging each case on its merits." The physician or surgeon holding it claims by his diagnostic skill to be able to discriminate between the cases it is safe to leave and those it is dangerous to leave without immediate operation. It is my conviction that any one holding this view has only to go on long enough acting up to it to sooner or later make a mistake. A concrete case, taken from my notes, will illustrate my meaning better than any abstract argument:

One afternoon about three years ago I was asked to see a boy in consultation with Dr. Adamson, of Lee-on-Solent. Fifty-four hours previously he had been seized with pain in his right iliac fossa, and had vomited once. His doctor was not sent for. He felt better the next day and went out for a walk, though he still felt some stiffness in his right side. This uneasiness in his right side continued to be present on the following

day, and his parents sent for Dr. Adamson, who asked me to see him. His condition was as follows: Pulse 90, temperature 99½°. He was a fine, healthy-looking boy, did not complain of feeling the least ill, and did not look ill. On placing my hand over the appendix region a lump could be felt, which was tender. The rest of the abdomen was soft, and without tenderness. There was no doubt about the case being one of appendicitis, and a diagnostician, further speculating on the picture inside the abdomen, would have probably said, and reasonably said, "a mild attack of appendicitis with some plastic lymph or a roll of omentum wrapped round it and walling it off from the general peritoneal cavity." As, however, my experience had long since convinced me that such musings were purely theoretical, frequently fallacious, and not to the point, I told the boy's father that all I knew was that the case was one of appendicitis, that it was apparently a mild attack and might get well, but that as I could not see the condition of the appendix, I would not take the responsibility of advising delay, and that if he wanted to be absolutely secure of his boy's recovery he had better have him operated upon at once. The operation was performed the same day. The lump that had been felt turned out to be the appendix greatly enlarged and acutely inflamed lying close beneath the abdominal wall, perfectly free, without the vestige of an adhesion about it. After removal it was found to be converted into a bag containing about ½ oz. of very foul pus, and at its base was a slough as thin as a wafer paper, so that the gentlest pressure with the blunt end of a probe caused immediate perforation. There is not the slightest doubt but that within a very few hours this appendix would have perforated and discharged its foul contents without let or hindrance into the general peritoneal cavity.

Now, judging this case on the condition actually found, no surgeon or practitioner would in his senses have countenanced a moment's delay in its removal; but, "judging it on its merits"—in other words, on the clinical picture—it was an appendix safe to leave. On the advocates of "picking and choosing" in cases of appendicitis, it appears to me, lies the onus of giving us the information which will enable us to *safely* "pick and choose."

The exponents of the other view (myself among the number) take up a different attitude. They believe that there are no signs which enable the surgeon to "pick and choose." They therefore say this: "If a patient has appendicitis, remove the appendix without any delay." They admit of no compromise, and countenance no doubt about what to do. To the practitioner holding this resolve clearly and firmly in his mind when called to see a case, the only question arising is one of diagnosing whether appendicitis is present or not. If he is in doubt he will, of course, closely watch the case for a few hours, and not advise the appendix to be removed for a stomach-ache, but having once diagnosed that the case is one of appendicitis (and it is seldom difficult to decide within twenty-four hours), the removal of the appendix forthwith follows inevitably. Such an attitude, I maintain, removes all anxiety as to the outcome of a case of appendicitis. The practitioner knows that the case will recover. If, on the other hand, he decides to "wait and see," he knows nothing about what is happening or going to happen within the abdomen and eventually to his patient's life. There is no doubt that the frank admission of ignorance of the condition of the appendix in appendicitis in place of an overweening confidence in fine points of diagnosis, coupled with decision to act in place of a feeble hesitancy, would almost abolish the 1,500 deaths which occur annually in England and Wales from appendicitis, and this, I take it, is what Mr. Paterson means, whether, as Sir George Beatson suggests, many of them under the existing order of things occur after operation or not.

The only remaining cases are those in which the practitioner is not called in till the third or fourth day or later. If he diagnoses appendicitis, again I say without the slightest hesitation operate. It may not be absolutely safe to do so then, but it is safer than waiting. My experience of operation in appendicitis leads me to the following conclusion: If a patient is seen late in an attack and if he is not suffering from profound toxaemia as evidenced by his general condition, he can be perfectly safely operated upon. I say operated upon, but I do not mean by this that he can always have his appendix removed safely. I agree that deaths at this stage are frequently due to a too elaborate operation and a determination to remove the appendix at all costs. I believe this to be wrong treatment. Subject to this proviso, if the general condition is good the patient almost invariably recovers at whatever stage the operation takes place. Of course, the ideal time is within the first twenty-four hours.

If, on the other hand, the patient is suffering from profound toxaemia and the surgeon decides to give him the chance of operation (and this is probably his only chance), and the patient dies, it is a matter of speculation whether the death is exactly due to the disease or operation, or both combined. The patient would probably have died in any case. But of this there is no doubt whatever, that it is a death caused by delay in operating, and, as Mr. Edmund Owen suggests, should be so described in obituary notices. When appendicitis is universally recognized as an acute surgical affection whose only treatment is immediate removal of the appendix, both the 1,500 deaths alluded to by Mr. Paterson and the 3.3 per cent. in Sir George Beatson's series will disappear—*and not till then.*—I am, etc.,

Portsmouth, June 15th. CHARLES P. CHILDE, F.R.C.S.

SIR,—It has come as a shock to me to learn that there is still any doubt as to the propriety of operating on every acute case seen within twenty-four or even forty-eight hours after the onset.

The cases which give most anxiety are those the surgeon sees on the third or fourth day. They may be divided roughly into two classes: (1) Bad acute cases which ought to have been operated on at once and are in danger of death; (2) subacute cases which will either (*a*) resolve, (*b*) suppurate, or (*c*) occasionally perforate.

I must confess that I do not like operating at this time, and prefer to wait a few days, unless the severity of the symptoms forbids. In past times I have seen a good many patients die, in less than twenty-four hours after the operation, simply poisoned by a big dose of toxin. My experience is that operations done, say, at the end of a week give rise to far less constitutional disturbance than those done on the third or fourth days, and do not place the patient's life in jeopardy.

I believe that after a certain time there is—circulating in the blood—sufficient antitoxin to neutralize the toxins which will be liberated at the operation.—I am, etc.,

Lancaster, June 17th. A. S. BARLING.

SIR,—As a physician I venture to ask permission to say a few words on the subject of operation in appendicitis, because my views are at least free from the suspicion of being influenced by any desire for operation. For some years I have seen a considerable number of cases both in hospital and private practice; in most cases I have seen the operation, examined the condition of the appendix, and known the result. In age they have ranged from 20 months to 84 years; the latter was the only one in which an operation was not performed. As a result I am an uncompromising advocate of immediate operation, whatever the stage of the disease. Surgical technique and anaesthetics being what they are to-day, I believe the risk of operation is far less than the risk of leaving a case whose exact condition at the moment it may be impossible to gauge, whose condition in twenty-four hours' time it is even more impossible to forecast. Who can say, to use Sir George Beatson's words, whether the elements of infective material with which the peritoneum is impregnated will die down and cease to be dangerous, or spread into a fatal peritonitis? Have we not most of us seen within twenty-four, or even twelve, hours of the initial symptoms, especially in children, the beginnings of a local peritonitis without any sign of a protective barrier? Any one who can give us the indicia on which they rely to determine the course of such a case without opening the abdomen will confer an inestimable boon on medicine. No one, I suppose, doubts that some cases may be left with safety for a few hours when under surveillance in a hospital or home, but if there is any doubt operation and not delay should be the rule, and with children I do not think any delay is admissible. I have not the figures as to cases that I have seen in hospital, but in some 50 cases seen in private and operated on by various surgeons, many in children under 10, there has not been a single fatality.

One great objection to not operating in private practice is that the patient may repent as he improves and go about with a damaged appendix, waiting for that second attack which may be his last. I believe it is sheer madness to leave a damaged appendix in any person who

wishes to lead an active life. When I recall the number of disasters, merely in the circle of my own friends and acquaintances, I have myself known during the last ten years, from the attack occurring in some remote part of England or Scotland where surgical aid was not forthcoming, I find that it is difficult to write more strongly than I feel on this point.—I am, etc.,

Brighton, June 12th. EDMUND HOBHOUSE.

HEDONAL AS A GENERAL ANAESTHETIC.

SIR,—In the JOURNAL of June 15th I see a reference is made to a death which occurred at Golden Square Throat Hospital after hedonal infusion anaesthesia.

As the administrator of the anaesthetic in this unfortunate case, it was, and is, my intention to report the facts fully on some suitable occasion to my fellow specialists. In the meanwhile, as your account conveys a somewhat erroneous impression, I shall feel obliged if you will allow me briefly to supplement it. The two most important things discovered at the *post-mortem* examination were that the lungs were absolutely studded with small miliary tubercles, and that the trachea and bronchi contained a quite large amount of fluid blood which had doubtless been inhaled during the two and a half hours he lived after the operation. I should state that the operation was for double frontal sinusitis, and that during its performance the posterior nares were plugged. The case was in no sense one of *poisoning* by hedonal. That this drug contributed to the death by depressing the respiratory centres and abolishing laryngeal reflexes is, I am afraid, only too obvious.

The above stated *post-mortem* conditions were mentioned by Dr. Trevor in his evidence, and to omit them in an account of this fatality would be unfair to this method of producing anaesthesia.—I am, etc.,

London, W., June 15th. G. A. H. BARTON.

POOR LAW GUARDIANS AND PUBLIC APPOINTMENTS.

SIR,—Dr. Fletcher's letter (p. 1160) once more calls attention to the discontent felt by medical practitioners in a district where the public vaccinator is also in general practice and whose domiciliary visits to patients may in some instances cause a grave injustice.

On the whole, Dr. Fletcher and his colleagues may consider themselves well off, or at least in a better position than a district where the public vaccinator is also registrar of births, marriages, and deaths.—I am, etc.,

Kencott, May 20th. F. W. PILKINGTON.

THE FINANCES OF THE ASSOCIATION.

SIR,—Dr. Brassey Brierley's letter in the JOURNAL of May 18th is very much to the point at the present time. I see from the statement of accounts (SUPPLEMENT of May 11th) that the Association has during 1911 overspent its income by the amount of 7s. 9d. per member (p. 451, par. 28), by almost exactly the amount apportioned for JOURNAL and SUPPLEMENT, or well over £9,000. Not content with that, the Executive (par. 29) project expenditure involving for 1912 a deficit of £8,500. A financial policy of this description calls for very critical examination. I append side by side a few of the figures for 1910 and 1911, omitting shillings and pence:

	1910.	1911.
Central Meetings—expenses...	...£4,984	... £11,185
Representative Meetings—printing ...	334	... 1,336
Council Meetings—printing	116	... 709
Election Returns Committee—printing	10	... 56
Finance Committee—printing ...	6	... 81
Finance Committee—railway fares	12	... 111

These differences in expenditure call for something more than a mere statement that they are accounted for by so many extra pages of printing and so many extra railway fares for members of committees. As Dr. Brierley inquires, "What is the necessity for it?" and "what have we had in return?" This increased expenditure must be justified by results. Also there is in the JOURNAL account (abstract G, p. 447) an item of £3,429 for contributions and reporting—some £65 per week. How much of this is for reporting, and reporting what?

In conclusion, I would like to draw attention to a current fallacy. It is frequently taken for granted, but does not in the least follow, that the leaders of the profession in medicine and surgery must necessarily be its leaders in its politics, finance, and organization; and the "rank and file" are accused of disloyalty to their "leaders" if they break away from this external "leading" of this eminent surgeon or that eminent physician. This is simply ridiculous, the result of a silly straining of metaphor. At the present time it is the interests of the general practitioners which are imperilled. They constitute some nine-tenths of the profession, and their interests and those of the "leaders" of the profession are by no means always identical, else there would have long since been an end made to hospital abuse in London.—I am, etc.,

Southsea. E. A. SHAW.

THE BRIGHTON EDUCATION COMMITTEE, MINUTE 97, AND THE BRITISH MEDICAL ASSOCIATION.

SIR,—I shall be obliged if you will allow me to direct the careful attention of your readers to the report of the sixth ordinary meeting of the Brighton Division, which will be found on page 559 of the SUPPLEMENT to the BRITISH MEDICAL JOURNAL for May 25th.

The matter under discussion was the action of the Brighton Education Authority in appointing a school medical officer whose duties should include both inspection and treatment. (It should be added that the full scheme of the Education Committee includes the subsequent appointment of an assistant medical officer whose time is to be divided between the department of the education and that of the sanitary authority.)

It will be noticed that no objection is made in this resolution to the appointment of a whole-time officer as such. Nor is there any objection to the salary offered by the Brighton Corporation as being inadequate.

Now, it may perhaps be doubted whether, as a general rule, the inclusion of the duties of inspection and treatment in the hands of the school medical officer is desirable. Probably in many places it would be found to be undesirable or impracticable. In other places it might work well. In Brighton, where the organization already in existence, both on the administrative and on the medical side, happens to be of a high order, the plan would perhaps have an unusually good chance of succeeding. There is, in fact, no very wide basis of experience upon the matter at the present date, for the working of the Act is still in an early stage.

All this, however, we are told, is not for us to consider. We are to shut our eyes altogether to the fact that a large and intelligent Education Committee, awake to their responsibility to the ratepayers, and thoroughly anxious to administer the Education Act in the best interests of the children, have deliberately decided, after plenty of consideration, that the scheme is one which they wish to try.

We are to know nothing but Minute 97, and are to care not at all whether or not the interests of the community are best served by this or some other scheme. The resolution which condemned the appointment did so simply and solely "*because the terms of the appointment are contrary to the principles of the British Medical Association as laid down in Minute 97, etc.*"

That no one might have any doubt upon the matter, Dr. Cox, Medical Secretary to the Association, came to the meeting of the Brighton Division on purpose to support the resolution with all the authority of his office, and to urge upon us as loyal members of the Association the line of action which we ought to adopt.

We were told very emphatically that we must not stop at Warning Notices in the JOURNAL, and resolutions of disapproval, and deputations to the Board of Education, but that we must go on to secure the expulsion of Dr. Hutt from the British Medical Association, and must see to it that should he determine to take up the appointment his continued tenure of it should be rendered socially and professionally impossible.

Now, Sir, I contend that all this is simply preposterous. I have had the honour to hold the position of Chairman of the Brighton Division for the last two troublous years. During this period I have had opportunity of showing my loyalty to the Association by heading two deputations to members of Parliament in defence of the principle that a

National Insurance Act shall not make use of the medical profession upon impossible and unworthy conditions. I have twice gone with deputations to education committees in defence of the principle that when parliamentary or municipal authorities have decided to pay for inspection and to order treatment, they shall provide means to carry out such treatment, and shall not expect it to be done by the charitable work of doctors and hospital subscribers. I have also acted as spokesman to the Brighton Board of Guardians in defence of the principle that boards of guardians who appoint operating surgeons to workhouses shall not offer an honorarium but a salary.

In each of these cases I have had the satisfaction of feeling that the cause which I was defending was in accordance with the principles of the Association, and was at the same time capable of defence on the common grounds of reason and justice.

But on common grounds of reason and justice, it is hard to see how any such defence could be attempted on behalf of the above resolution. Still more difficult is it to see how the methods by which the resolution is to be enforced can be expected to justify themselves at all.

The Brighton Education Committee has, of course, a perfect right to select from among various possibilities whichever scheme it believes to be best suited to its wants.

On the other hand, the Association may fairly use its influence to secure that whatever scheme is adopted the doctor or doctors employed shall be properly paid. This done, any further action on their part surely becomes a merely impertinent interference with what is not the business of the Association, but is purely the business of the education authority.

To the attitude of the Brighton Division, and, I suppose I must now add, to the attitude of the British Medical Association, upon this matter I have been consistently opposed throughout.

I had hoped that I might be able to regard the question as one of those upon which a wide divergence of opinion would not be incompatible with continued membership of the Association. This resolution, which was passed by a large majority at the Division meeting, and the pronouncement of the Medical Secretary of the Association, have satisfied me that, for me at any rate, such a position is no longer tenable. I am therefore resigning both the chairmanship of the Brighton Division and membership of the Association.

I should like to add one question in conclusion. Quite apart from what may be reasonable and just in the matter, is it a wise proceeding at the present juncture to adopt a policy which is an invitation to all practitioners who intend to occupy themselves with public health to hold aloof from the British Medical Association?—I am, etc.,

Reginald John Ryle,
Late Chairman of the Brighton Division.

Brighton, May 26th.

MEDICAL MEN IN THE HEBRIDES.

Sir,—In 1900 I spent a month in Iona, where there is a population of about 250. No doctor is to be had nearer than the other side of Mull, between forty and fifty miles away. One day I was asked to see a Mrs. M., whom I found with an enormously swollen foot and an incipient abscess at the root of the great toe, but otherwise strong and healthy. With much mystery she produced a very large needle, japanned to a fine glossy black, which she informed me she had extracted that morning, but for the appearance of which she could in no way account, though it might have been put there by *others*. Luckily I had by me a small bottle of otto of roses. This is a powerful diffusible antiseptic, which is very slightly irritant, and I have used it in my own person for anthrax with the best results. It will also disintegrate and loosen almost any crust in a few minutes, leaving a clean surface, and quickens the separation of sloughs. I used this on my patient, after squeezing out a drop or two of purulent fluid, and she made a complete recovery in little more than a week, whilst she had intended to go in search of aid as far as Glasgow on the following day, in which case probably deep-seated suppuration would have set in, and a severe operation have been necessary.

The Mull doctors, one of whom has a fine Gothic tombstone in the Reilic Oran at Iona, were long looked on as the first in Scotland. These were the Beatons, who succeeded each other from time immemorial, and were occasionally summoned to Edinburgh to attend royalties. A daughter of one of them was amongst the four Maries of the old song. The old herb garden in which they grew their simples still keeps its name in the south-east of Mull, and it looks as if the only other medical attendant formerly available in the Hebrides was in Islay, if one may trust an old Gaelic saying: "In sickness fare to Islay, if Islay fails try Mull, if Mull says, 'I canna,' the de'il has ye."—I am, etc.,

Bath, June 8th. J. A. Goodchild.

The Services.

FIRST WESTERN GENERAL HOSPITAL.

Lieutenant-Colonel Nathan Raw, M.D., Officer Commanding First Western General Hospital, entertained the medical and nursing staff to dinner at the Exchange Station Hotel, Liverpool, on May 29th. The Earl of Derby, Lord Mayor of Liverpool and Chairman of the Territorial Association, was also present as a guest; and also Sir Launcelot Gubbins, Director-General of the Army Medical Service; and General Bethune, commanding the West Lancashire Division. The nursing staff of the hospital was represented by Miss Glover, principal matron, Miss Purves, matron, and sixty sisters and nurses. In making the annual report for the year, the commanding officer laid special emphasis on the fact that the personnel of the hospital was up to full strength, and that the nursing and medical arrangements were in perfect order and ready for any duties which the hospital might be called upon to perform. About 160 members of the staff of the hospital sat down to dinner and afterwards enjoyed a most excellent concert.

INDIAN MEDICAL SERVICE.

The annual dinner in London of the Indian Medical Service took place at the Hotel Cecil on Thursday evening, June 13th. Surgeon-General J. P. Greany was in the chair, and the guests were: Sir Richmond Ritchie, K.C.B., Under Secretary of State for India; Sir Thomas Barlow, Bart., K.C.V.O., President, Royal College of Physicians; Sir Henry Morris, Bart., President, Royal Society of Medicine; the Editor, the *Lancet;* the Editor, the British Medical Journal. At these dinners no speeches are usually made, but the customary loyal toasts were given by the Chairman. Afterwards Surgeon-General Cleghorn, C.S.I., proposed the health of Lieutenant-Colonel P. J. Freyer, who had organized this and many previous dinners; and Lieutenant-Colonel Freyer, who was warmly received on rising, briefly replied. The following members of the service were present:

Surgeon-Generals: Sir A. M. Branfoot, K.C.I.E., W. R. Browne, C.I.E., J. Cleghorn, C.S.I., J. P. Greaney, G. W. R. Hay, Sir L. D. Spencer, K.C.B. *Colonels:* C. W. Carr-Calthrop, W. E. Cates, D. ffrench-Mullen, D. E. Hughes, M. D. Moriarty, A. Porter, W. A. Quayle, P. A. Weir. *Lieutenant-Colonels:* W. Alpin, J. Anderson, A. W. T. Buist, Sir R. Havelock Charles, K.C.V.O., D. G. Crawford, T. E. Dyson, P. J. Freyer, W. Gray, P. de H. Haig, C. T. Hudson, D. F. Keegan, J. Lloyd Jones, D. P. MacDonald, R. C. MacWatt, H. McCalman, J. Moorhead, T. R. Mulroney, C. W. Owen, C.M.G., C.I.E., T. H. Pope, K. Prasad, W. H. Thornhill, D. Warliker, H. R. Woolbert. *Majors:* H. Ainsworth, H. J. K. Bamfield, R. Bryson, S. H. Burnett, R. Heard, J. H. Hugo, J. C. Holditch Leicester, R. H. Price, R. F. Standage, A. E. Walter. *Captains:* C. Brodribb, C. A. Gill, W. Gillett, W. G. Hamilton, D. Heron, J. H. Horton, D.S.O., R. McCarrison, J. McPherson, A. E. Hayward Pinch.

Under the will of the late Rev. James Marshall, of South Hampstead, formerly assistant master at Westminster School, the Westminster Hospital receives a donation of £500.

The French Surgical Association will hold its twenty-fifth congress this year, under the presidency of Medical Inspector-General Delorme, Chairman of the Army Technical Health Committee, in Paris, on October 7th and following days. The questions proposed for discussion are: Diagnosis and treatment of cicatricial stenoses of the oesophagus; clinical indications furnished by radiology in surgical affections of the stomach and intestine; coxa vara: its relations with fracture and stripping off the epiphysis of the upper end of the femur. During the congress there will be an exhibition of surgical instruments, medical electricity, dressings, and so forth, in the hall of the Faculté de Médecine.

Medico-Legal.

BELL *v.* BASHFORD AND THE BRITISH MEDICAL ASSOCIATION.

(Continued from page 1407.)

(Before the LORD CHIEF JUSTICE *and a Special Jury.)*

AT the sitting of the court on June 13th the Lord Chief Justice asked for Dr. Ross's book, which he said he would like to see.

Cross-examination of Dr. Bashford resumed: He had read a lecture delivered by Sir Henry Butlin in which Sir Henry Butlin said cancer was the result of a parasite. Many eminent men differed from him, and witness did not agree with him. He still held the view that operation was the only cure. The views of Sir Alfred Pearce Gould on cancer would certainly be considered by the Cancer Institute. He heard Sir Alfred deliver the Bradshaw Lecture on cancer.

Mr. Shearman read a passage in which Sir Alfred said that "there is a cure for cancer apart from operative removal."

Witness said that he (Sir Alfred) was not a quack. He knew Mr. Stephen Paget, who was Secretary of the Research Defence Society, but did not know that it was the duty of that society to inquire into cancer, or that it had made any such inquiries.

Mr. Shearman read a passage from a paper by Mr. Stephen Paget in which he said that in dogs malignant tumours had been reduced by transfusing blood from other dogs which had been rendered immune to this tumour.

Witness said he would not dispute the fact.

In re-examination witness at first said that it was wrong to put forward the treatment of blood with a pub'ic profession that it would provide a cure for cancer. It was wise for medical men to point out the result of their observations. It would be wrong to put it forward as a means of preventing the 30,000 deaths from cancer which occurred annually.

In answer to the Lord Chief Justice he said that since 1860 deaths from cancer in males had gone up from 200 to 800. In females it had gone up from 500 to 1,000. At present, from his scientific research, he was not able to give a reason. The increase represented only the total number of deaths which had been recorded from year to year, and did not give the true picture.

The Lord Chief Justice: What is the true picture?—The figures must be considered in relation to the parts of the body. There has been little increase in cancer of the uterus, but there has been an increase in cancer in the stomach and intestines.

The Lord Chief Justice: Have you any reason to give the jury for the large increase in cancer?—The figures must be analysed in such a way that instead of dealing with persons they deal with the different sites of the body in which cancer occurs. Again, cases were formerly said to originate in the liver. They are now allocated to their real position, and the increase is far more real than apparent.

Mr. Duke: I think the witness has an answer which he would like to give.

The Lord Chief Justice: What is the fact, due to scientific research, which accounts for the increase?—I cannot answer you, because we do not know.

Continuing, witness said he did not receive any payment for the article. He did not agree that cancer was a local manifestation of a toxic condition in the blood caused by the absorption of alkaloids.

The Lord Chief Justice: Have you any fact from your own research inconsistent with that view?—Yes; the whole occurrence of cancer in animals is incompatible with it. I have found that, on the removal of small growths from the tongue, there has been no recurrence of the disease.

Further examined by Mr. Duke: He thought that atoxyl was useless in the treatment of cancer. His knowledge was derived from papers. It was claimed by some people to effect a cure, but the results were uncertain. The drug was dangerous, in that, as was reported by Professor Koch, it induced blindness, the dangerous ingredient being arsenic. It was abandoned in favour of a new organic compound of arsenic, "salvarsan." He did not know whether that drug was useless, but Professor Czerny of Heidelberg had pronounced it useless in cancer. He had in his possession as Director of the Institute certain photographs of Arabs which formed part of the ground of his statement that there was cancer in Arabs.

Further cross-examined: He took the statement of Dr. Christopherson, who sent the photographs, that they were either Arabs or Copts. They were photographs of the most uncivilized races in the world. He had seen in Dr. Bell's book that he had been to Egypt to make inquiries himself, but he did not know that he had in consequence been made a member of a learned society. As to the increase of cancer, he did not know that in the period mentioned the amount of meat brought into the country had doubled. He knew that sleeping sickness was a disease of the blood, and that atoxyl was *a* remedy for it.

Mr. Duke: It is not *the* remedy?—No.

Dr. Lazarus-Barlow, a Director of the Cancer Research Laboratories, and Lecturer in Pathology in the Middlesex Hospital, said he had studied and written upon these various matters. As to the foundation at the Middlesex Hospital, it had existed since 1792, and had been established for the very purpose of studying cancer. From and before 1903 treatment of cancer otherwise than by operation had been steadily pursued, and a great number of remedies had been tested under his own observation. He had tried thyroid extract, high-frequency current, *x* rays, various medicinal and herbal appliances, treatment with serum, trypsin, and "radium" water. By "radium water" he meant water containing the gas given off by radium. None of these remedies were effective in the cure of cancer. He had also tried atoxyl, giving one-sixth of a grain six times a day, but it had to be given up because it caused vomiting. That was in 1909. In the conduct of his institution there was no tendency to prefer operative treatment, but to dispense with operation would be a great public boon.

In cases of operable cancer there was nothing but operation which would produce cure, and operation did produce cure; but he did not mean that operation always cured. Operation should be early. Delay was dangerous to the patient. He knew of no means of anticipating cancer in any person, and he never knew of any claim to anticipate cancer prior to Dr. Bell's book. Cancer was not, in his confident opinion, a blood disease. He had examined the blood of cancerous and non-cancerous patients, and had discovered no difference. He had seen the plates on which Dr. Bell relied, and they did not, in his opinion, throw any light on the matter. That extended even to the granulation; which, in his experience, was often the result of bad technique in taking the blood. Delay in taking the blood, pricking the finger with a blunt needle, failure to wash the finger, or pressure when taking the blood—all these things might produce granulation. Dr. Bell's "three symptoms" were of no value in the diagnosis of cancer as they occurred in other diseases. The special diet recommended, and the vegeterian diet were, in his opinion, valueless. Dr. Bell's statement that at least 50 per cent. of the tumours of the breast were not cancer at all, was not his experience. He considered that over 70 per cent. of those tumours were cancerous.

Cross-examined, witness said that his deliberate conviction was "operation and operation alone." That was properly described as the orthodox opinion at present. He had read Sir Alfred Pearce Gould's Bradshaw Lecture. He remembered something about "natural cure" (on pp. 1672–1673), and the statement that *there is cure of cancer apart from operative removal.* Witness did not disagree with that passage, nor did he disagree with Sir Alfred's view that one should look in the future to therapeutic remedies, and that such views should be seriously discussed. He did not think that if a man differed from the received opinion it was proper to attack him without inquiry. If a patient came with a tumour, it was sometimes difficult to diagnose cancer. The received view was that it should be excised at once.

In re-examination, he said Dr. Bell's books added nothing to medical knowledge. There was no authenticated case in them. There was no case there cited which was proved microscopically to be cancer.

By the Lord Chief Justice: The parts of the body where cancer generally appeared were the mouth, throat, rectum, stomach, breast, and uterus. Patients generally complained, in the first instance, of swelling. They generally came when the disease was far advanced, the period varying according to the place where the disease was seated. A patient might come as late as six months; but, even if he came early, there was no remedy without operation.

At what stage of the internal cases can you diagnose cancer? Within four months?—No; it might be going on for that time without any one being able to diagnose it.

You said in chief, "There is no cure apart from operation," and yet you said you agreed with Sir Alfred Pearce Gould?—My answer is that no human individual can cure without operation. In a few cases Nature cures without operation, but no man knows how Nature works.

Continuing, the witness said that the treatments at the hospital to which he referred either dealt with the health of the person or were remedies applied externally.

Dr. Bulloch, bacteriologist in charge of the bacteriological laboratory at the London Hospital, etc., said he had devoted twenty years to pathological study, including the microscopic examination of blood. He had seen the plates in Dr. Bell's books. They threw no light upon cancer. He had examined the blood of numerous cancer patients and the blood of patients in normal health and there was no difference. Examined as to the photographs of blood which had beeen submitted to Dr. Bell in the course of his evidence ,he gave evidence to the effect suggested by Mr. Duke in his questions to Dr. Bell. There was a "crenated" appearance in Dr. Bell's photographs which sometimes appeared in films of blood which had begun to dry. Again, the manipulation of the glasses on the slide might cause the appearance. Advanced cancer might, in his view, show a perfectly normal blood. As to the leucocyte described by Dr. Bell, he thought it was an air bubble. The apparent "nucleus" was probably a red corpuscle beneath. He had never seen a leucocyte with a dark rim. Blood might alter in a short time.

The Lord Chief Justice: It is common ground that the photographs of blood vary according to the way in which the specimen is prepared and the photograph taken.

Continuing, witness said that in his view cancer was a local disease. No one doubted that it depended upon the general processes in each individual person. Cancer was not confined to old people. There was nothing in either of Dr. Bell's books which threw light on the origin of cancer. He had had experience of the use of atoxyl. It was uncertain in its action, and was tried in cases of syphilis and sleeping sickness. It had a selective action and was cumulative in effect. It was used in sleeping sickness, but had to be given up as it caused blindness, and was a drug to be used with the greatest caution. He had given as much as two grains.

In cross-examination he said there were a number of persons being treated at the London Hospital for cancer without operation. A number of surgeons thought that there were cases in which operation should not be resorted to at once. He had not much acquaintance with veronal, but a very small dose of it might be poisonous. His objection to atoxyl was its insidiousness. There were over 60 cases of blindness since 1906. The medicine "606" differed from atoxyl and was an improved form, although it also contained arsenic. The examination of the blood was frequently undertaken for purposes of diagnosis. It was a very small part of his work to look for bacilli in the blood. Many modern diseases were treated by injection of a curative agent into the blood.

By the Lord Chief Justice: His own photographs were taken two or three hours after the extraction of blood. Dr. Bell's photographs were untrustworthy, because they were reproduced by a different method, the films were not all of a uniform thickness and the lighting was eccentric. The variation in thickness appeared on the films themselves. There was no difference between the appearance of the corpuscles in the case of a healthy and a cancerous patient, except that in an advanced stage there was a breaking down of the red corpuscles, but that was common to a number of diseases.

Mr. Barnard, Fellow of the Microscopical Society, Lecturer in Microscopy at King's College, said he had experience of examining and photographing blood. He had had no medical training whatever. He had received the samples of blood from Dr. Bulloch himself. The photograph was taken at once. There were not many hospitals where the photographs were taken direct. He also took 1 *a*, 12 *a*, and 7 *a* from his own arm.

In cross-examination, he said that his preparations were made for the purposes of this case. When he drew his own blood it went straight upon the glass. He took blood from his ear on three separate occasions.

Mr. Shearman: How do you classify yourself; are you neurotic, or normal, or what?—I am not conscious of anything subnormal at present.

Continuing, he said he did not know who was the first medical man to make use of photomicrography. The book by Dr. Bell, which was published in 1877, contained pictures, but he did not look upon them as photomicrographs. He would not regard Dr. Bell as an expert at the art of taking photomicrographs, but he only judged by the appearance of the pictures produced.

By the Lord Chief Justice: The difference between photographs of the same blood at practically the same time could be explained by shifting the illuminating apparatus.

Arthur Edwin Boycott, M.D., Lecturer on Pathology at Guy's Hospital, said he agreed with Dr. Bulloch's evidence as to the appearance of the blood. He had been examining the blood microscopically for many years. He could not say from the examination of blood whether a man was suffering from cancer or not.

Cross-examined, he said he had never made a particular inquiry as to whether it was possible to make the distinction. It was easy for the expert to distinguish between healthy blood and the blood of a unhealthy person. There were marked appearances in a case of advanced cancer, but they were not distinctive of that disease.

Dr. James Maughan, one of the police surgeons of London, said he had had experience of the treatment by atoxyl under the plaintiff's method between 1908 and 1910. Anaemia and asthenia—that is, general weakness—were characteristic of those cases. He gave a grain and a half every alternate day. Apparently there was very marked improvement in the cancerous condition. The tumours almost vanished. One tumour was abdominal, another in the bladder, and another in the tongue. He did not, however, continue the use of atoxyl, as a result of his experience in those cases. In the bladder case death resulted from haemorrhage; in the abdominal case death was due to syncope; and, in the case of the tongue, he believed that poison from the tongue has been inspired into the lungs, setting up gangrene.

Cross-examined: It was true that in this case the lumps were rapidly reduced. If an equivalent for atoxyl which had no after-effects could be found, it would be most valuable.

Re-examined: Arsenic had been used for the reduction of tumours for generations.

By the Lord Chief Justice: The use of atoxyl might improve the condition of the patient, even if death ultimately supervened. When he used atoxyl the conviction was forced upon him that life was prolonged in each case.

Sir Alfred Pearce Gould said that the two books of Dr. Bell were wholly valueless from a scientific point of view. He found so much that he knew to be incorrect that he did not attach importance to the other statements, of the truth of which he had no practical experience. He did not believe in the method of diagnosis. As to the treatment of cancer, he did not find evidence in the book that the treatment had been successful. He had tried it, or some parts of it, without success. There were elements of it which he, in common with other surgeons, recommended—for example, ventilation, fresh air, etc. There was not a tittle of evidence in the books to support the blood theory. Men and animals which never ate flesh got cancer. As to the use and effect of atoxyl, he knew it had been used by other surgeons in cancer, and it had been given up. It had never been an "accepted" remedy for cancer, but it had been tried. He had given it up because he failed to notice any advantage to some patients, while others had suffered from their eyes. It was untrue to say that operation invariably aggravated the disease. He had seen cases of undoubted cancer cured by operation. *X* rays and radium were used for rodent ulcer, which was the least malignant form of cancer. As to the alleged origin of cancer, it was a local manifestation. He did not believe that there was any evidence of the previous accumulation of the deleterious alkaloids.

Cross-examined: His Bradshaw Lecture was published under his supervision in the *Lancet*. It would certainly be a great thing to find a cure for cancer which did not necessitate operation. He read Dr. Bell's books a day or two ago. He was not there to suggest that the accounts of what Dr. Bell did to his patients were not accurate. If the cases were genuine the treatment which Dr. Bell advocated deserved to be fairly considered by medical men, but in his view Dr. Bell's claims had no secure foundation. He would never recommend an early case of cancer which was capable of free removal, and in which there was no preindicative condition of the patient, to be treated by *x* rays. He recommended the use of *x* rays in certain inoperable cases; *x* rays sometimes produced cancer.

Mr. Shearman: One of your remedies is dangerous?—Both are; the knife is also dangerous.

Continuing, witness said there was nothing in Dr. Maughan's evidence to make it clear that the reduction of the tumours was due to atoxyl.

Re-examined, witness said that when he referred to "cures" in his lecture he meant natural cures. Cases which were not subjected to any special form of treatment at all sometimes got well.

In answer to the Lord Chief Justice, he said that the general practice and belief of medical men was that the only way to cure cancer was by surgical removal. He was at pains to say that, in spite of that widespread opinion, he knew of cases which were cured without operation and without any special treatment at all. He did not know what cured those patients. He did not say, "I know a cure"; he said, "There is a cure," and that certain cases were cured but did not say he knew the cure. He was of opinion that the hot air treatment was useless. Cancer patients suffered much pain, but the suffering got less towards the end of the disease.

The Lord Chief Justice: Are you able to say whether the treatment Dr. Bell has used might tend to reduce suffering? It has been proved that in certain cases he treated there was an extraordinary diminution in the suffering?—I think it might.

At this point the jury indicated that they had had enough of what the Lord Chief Justice called expert evidence.

Mr. Duke said he had no more that he intended to call. To say he had no more would not be accurate.

Dr. Bell, called and further cross-examined, said he had produced certain case-books for examination. He only sent some books, as he did not keep others which were not required for reference. They referred to 325 cases which were not all cancer patients; 25 per cent. of them were apparently cancer. Each one had a blood examination, but notes were not always made. In some cases hydrocyanic acid was prescribed for vomiting, but they were not necessarily cancer patients.

In re-examination, he said that atoxyl had to be used when it was fresh.

Mr. Duke, in addressing the jury, said he, too, like the Lord Chief Justice, desired to emphasize the importance of the case from the public point of view. The plaintiff was a gentleman who had developed views of his own upon cancer. He abandoned operation in 1894, and in 1904 he came to London, and apparently had to be dealt with for the purposes of this case as a specialist in cancer.

Dr. Bashford, who had been spoken of somewhat contemptuously as a young man, had had a distinguished career both as a student and as Director of the Imperial Cancer Research Laboratory. Coming to the question at issue, had the defendants done more than exercise their right of fair comment? It was honest criticism. If the criticism was honest, it was within the protection of the law even if it was erroneous—even if it was extravagant. It was his task in this case to show that this was honest criticism. It had been suggested on behalf of the plaintiff that there was a kind of combination on the part of the surgeons of this country to maintain the position of operative treatment of cancer. It had also been said that the defendant, Dr. Bashford, had shown a want of humility. Had not an institution existed for cancer research in London since 1792? Was not the attention of medical gentlemen focussed upon this scourge of the human race in every country in the world? They were trying everywhere to find a remedy; and the common sense of the medical profession had united in the belief that there was no remedy except the knife which could be used with reasonable certainty. But let it not be supposed that there was a conspiracy between physicians and surgeons to impose upon the public and their patients that operation was the only remedy. They had only to look into the plaintiff's literature to see that he made that charge in relation to cancer. He could not consent to treat the plaintiff merely as a good Samaritan. His books, his newspaper articles, his lectures in the Hall of the Golden Age, were part of his machinery as a consultant in cancer. He sold his books for profit; he made appeals to the public; no doubt he treated some patients who could not pay gratuitously. He had taken means to put himself before the public since he set up in London in 1904. Such a man was not in the position of a philanthropist. In a passage in one of his books he pointed out how, under certain circumstances, much valuable time was lost by the failure to consult "a competent medical authority." Who was "competent" according to the plaintiff? They might presume that all the medical practitioners who supported his views had been called before them. Who was the "competent" person? It must have been the plaintiff himself; and,

according to the interview in the *Daily Mirror*, the matter was sufficiently clear. Dr. Bashford was not even a practitioner; and if the case must be put on that base ground, the physicians who had been called were not interested when they said, "We cannot treat for cancer." His learned friend had spoken of cancer, saying, "No one comprehends cancer"; he had also said, "The plaintiff has no cure for cancer." The eminent surgeons who had given evidence had stated that there was no remedy but the knife. But the plaintiff had said (according to the *Daily Mirror*) that there were 30,000 deaths from cancer which were preventable. Imagine the effect of such a statement upon the sufferer from cancer! All Dr. Bell's statements must be examined in relation to that announcement. His announcements went before the public; not only before the medical profession. His photographs were calculated to mislead the people. If his pretensions were false, were people to be mealy-mouthed in criticizing him—criticizing a man who did not hesitate to say of the whole of the medical profession that they did not always regard the health of the patient as the primary consideration? Eliminate the errors of the plaintiff's system, and what was left? "Cancer," he said, "was a disease originating in the blood."

For this there was a supposed scientific explanation—the entry of putrescin and another alkaloid into the blood. But the blood showed nothing definite. Dr. Bell believed it; two or three other medical men believed it, contrary to the experience of their professional brethren. Was there one man who could believe upon the evidence that if you cleanse the blood you necessarily eliminate cancer? It was at one time thought that it was a disease induced by a meat diet; but that had been exploded by statistics from Japan and India, not to mention Egypt. What did they know from the evidence of their senses during the last few days? It had been the most mysterious of diseases from an early period in the earth's history; yet in his book, *The Cancer Scourge*, Dr. Bell had written that he was convinced that cancer was always preceded by certain definite symptoms. It was easy, he said, to diagnose cancer. "Most easily preventable" said Dr. Bell. All the evidence went to show that a toxic condition of the blood might be due to many different diseases. Dr. Bell had said a most illuminating thing about the diet treatment and sunlight, ventilation and fresh air. Dr. Bell said he even prescribed it for people in good health. The fallacy of his boasted cures was that there was no scientific proof that his were cases of cancer. The great body of the profession had been driven to the view that the plaintiff's claims were mere pretences. He discussed the members of his profession severely, and then he was in turn discussed in terms of great severity.

Alluding to various passages in the alleged libel, Mr. Duke invited the jury to consider them all in the light of the plaintiff's denunciation of the medical profession. The stories told by Sir Spencer Wells were but classic instances of the practice of quacks. Dr. Bashford said in his article, "No one comprehends cancer"; Mr. Shearman said, "No one comprehends it"; but the plaintiff had said, "I comprehend it," and founding upon that he had asserted that the use of the knife was dishonest. Small wonder, then, that his conduct should be severely criticized. As to the analogy of dry rot in a beam, what Dr. Bell demanded was that you should treat the disease of cancer without eradicating the local manifestation. What was the judgement of the eminent medical men who had been called upon the plaintiff's books? They came to the conclusion that there was nothing in those books which was of any use. That was the opinion of men of wide experience, some of whom were not surgeons—were not even engaged in actual practice. They had devoted their lives to the investigation of this obscure disease. As to atoxyl, that was the most powerful preparation of arsenic which any one had ventured to use in modern times. It had a curative power, no doubt; but it was a power which threatened life by other means. What they really had to consider was whether the severity of Dr. Bashford's criticism showed that he was not honest.

It was a phenomenon in the medical profession that a man should advertise himself in the halfpenny press, and in the lecture room as a curer of cancer. Was Dr. Bashford not justified in describing Dr. Bell "as one of the most advertised curers of our time"? Finally, the Editor of the JOURNAL had summed up Dr. Bashford's article as he was entitled to do. They must consider Dr. Bashford's paper as a general criticism of quacks, and also as a particular criticism of Dr. Bell. It was clear from the evidence that Dr. Bell's pretensions could not be justified. What was his extenuation? That, if he did not cure the disease, he alleviated the lot of the sufferer. That should have been stated in the advertisements. They had only to consider whether the criticism went beyond the occasion. Was it not justified in the light of the public interest?

Mr. Shearman, in reply, said he was not going to address the jury at any length. Mr. Duke had carefully avoided the real point at issue. The action was not only against Dr. Bashford; it was against a journal which represented the orthodox view of the medical profession. His client did not ask them to say, "The surgeons are wrong and I am right." The heresy of one day was often the orthodoxy of another day. Was there not intolerance and bigotry amongst scientific people? Dr. Bell said, "The defendants may attack my system but they must not attack my honesty." The real and only question in the case was, Was there any ground for saying that the plaintiff had practised upon the credulity of the public? There might or might not be grave errors in Dr. Bell's system; but if they were satisfied that there was something serious in that system, that was enough for the plaintiff. Were they satisfied there was nothing in it? He had not exaggerated the number of his cures; but he had instanced cases proved to be cancerous where tumours had disappeared under the influence of atoxyl. It was sufficient for him to say that treatment had been tried and was being tried by other persons as a cure for cancer. His client's system was "treat the blood." He asked them to believe that Dr. Bell had a message to deliver to the public. His plan had produced definite and tangible results. He submitted that the action was undefended. No general practitioner would send a patient to Dr. Bell after having read this article.

When the court sat on Friday morning the Lord Chief Justice said that he had received a large number of letters from various people with reference to the case, but he did not desire to pay any attention to any of them except one, which was from a gentleman apparently of authority, who stated that the Japanese were largely eaters of fish. He desired to ask Dr. Bashford a question upon that.

Dr. Bashford, recalled, said, in answer to his lordship, that he knew from conversations with various persons that the Japanese ate rice.

The Lord Chief Justice: Do you know whether they are largely eaters of fish?—I do not know whether they are or not. I know they eat rice.

SUMMING UP.

THE Lord Chief Justice: Gentlemen of the jury, this case has lasted four days, and has been most ably conducted on both sides; but it will be necessary for me to direct your attention to certain questions of law, and, only shortly I hope, to call attention to the evidence upon which some of the questions must to a great extent depend.

Gentlemen, I will assume, for the purpose of what I am going to say to you, as a matter of law, that you are of opinion that this article charges the plaintiff with being a "quack." That would not of necessity entitle the plaintiff to a verdict; because, even although he is a qualified medical man, you may be of opinion that what he has done may be fairly described, as a matter of comment, as "quackery." Although it is a very important matter to be considered, when you come to deal with some of the questions which have been raised, that the plaintiff is a qualified medical man, and has practised for upwards of thirty years as a qualified medical man, you must not assume as against the defendants that the article is of necessity a libel because it calls him a "quack." You must, of course, when you come to consider the later questions, bear in mind that the plaintiff is a qualified medical man, practising his profession in this city; because, as Mr. Shearman told you a few minutes ago, there cannot be anything much more serious than charging a medical man, with all his knowledge, with "quackery." I caution you on this because I once made a mistake on this matter, and therefore it is in my mind. All I say is, a qualified medical man may be guilty of "quackery"; but when you come to consider the evidence you must consider whether what he has done justifies that term.

Then I have to tell you distinctly that a great deal of the observations made by Mr. Duke yesterday and to-day were not founded upon a correct view of the law. He over and over again referred to Dr. Bashford's honesty. You may, in one aspect of the case, have to consider, if you think it is a libel, how far you are satisfied that Dr. Bashford has been perfectly honest in the matter; but it would not be the less a libel because Dr. Bashford honestly believed what he wrote. If he, honestly believing it, called the plaintiff a "quack" and described his system as "quackery," and if you in your judgement come to the conclusion that that is not fair comment, then I tell you the fact of Dr. Bashford's honesty has nothing to do with the matter. You may consider that presently, if it becomes necessary, in the consideration of the question of damages; but to suggest that it is fair comment because Dr. Bashford honestly believed it is not the law if you come to the conclusion that it is a libel upon the plaintiff and is not fair comment. Of course, when you come to consider the question of fair comment, you will have to consider very carefully what the libel really suggests.

It was rightly said to you at the beginning of Mr. Shearman's reply that the only question is whether or not the plaintiff has been libelled and whether this article is fair comment. If you come to the conclusion, having regard to the statements of facts, strong as they are, that you think that they are fair, you will be entitled to say so; but you have not, except in so far as it bears on that question, to deal with the somewhat difficult and complicated medical questions that arise. They do have a material bearing upon some parts of the case and that is why I shall have to direct your attention, at not too great length, I hope, to the evidence.

One other word of caution, which has been given by judges of far greater distinction than I: if you think the real comment is justified, then do not trouble about strong language. It has been said by a great judge that you are not to deprive an article which is fair comment of the protection which is given to fair comment, because it is couched in strong language. If you think the article is not fair comment upon the true facts before you, then of course the strong language becomes very material, but I wish to say to you, and I do say to you, that the plaintiff cannot complain of strong language if it is justified, because, without going through the words again, he has himself used very strong language. He has spoken of serum, which we know nothing much about, as "serum quackery." He has said that the surgeons who operate for malignant disease by operation are in some cases—I will not say in all—guilty of a crime; which is, of course, strong language. I refer to page 110 of *Cancer and its Remedy*, which has been often read before.

"It may not have escaped the notice of my readers that an eminent Paris surgeon recently expressed the opinion that 'to operate for malignant disease is a crime.' If this is true, then it is a 'crime' which is too frequently committed with impunity, for it is not as yet generally recognized as such, but every day would seem to be bringing us nearer to the time when there will be no doubt in the public mind on the subject." In the preface which Mr. Duke read to you there is: "Unfortunately, surgery has all along adopted this principle. Hence the invariable result of operation in cases of cancer has consisted in the speedy recurrence of the disease in a more aggravated form than that which previously existed, increase of pain, curtailing the life of the patient, and moreover in many instances interfering, fatally, with the therapeutic measures which might otherwise have proved efficacious." Then on page 16 of *Ten Years' Record of the Treatment of Cancer without Operation* he speaks of the number of operations which might have been avoided and does very severely criticize those who operate. It is quite true he does not refer to an individual, and thereby it cannot be said he has libelled anybody; but if you think the criticism is justified, it does not lie in the plaintiff's mouth to complain of strong language, and it would not be just to decide this case only on the question of strong language. Of course, as I said a moment ago, if it is not justified the strong language becomes important; but do not deal with this question from the point of view of seeing whether the language is strong until you have made up your minds on the merits of the article and decided whether it is fair comment or not.

We are dealing with a very important matter, and I ask you to consider the matter very carefully from both points of view. If you think, assuming as I do for the moment, that this article charges the plaintiff with being a quack, and you come to the conclusion that he is one, do not hesitate by your verdict to say so. If, on the other hand, you think that he has been unjustly criticized and that his work has not been fairly commented upon, do not hesitate to find for the plaintiff; because in such an important question it would be a most lamentable thing that research, experiment and attempt to find some cure for this dreadful disease, this scourge of mankind, should be checked by unjustly criticizing and commenting upon the action of such a man as Dr. Bell.

Now what is the position at the present time? Before we deal with this case I will put to you, as shortly as I can, the facts, which are entirely for you; but what is the position when this matter comes to be discussed? It is not denied that against any person who goes in for the cure of cancer by medicine or treatment, or by other than operation, there is practically the whole body of surgical opinion against him. It is not disputed by Mr. Shearman, and it is fortified by the evidence that all the surgeons and practically all the doctors are against there being any cure except by operation. One of the most eminent surgeons, Sir Felix Semon, was called to say that in cases of the throat he had been successful in no less than 20 out of 25. There is no doubt that, for that particular cancer, operation may be said to be very successful. Now we come to what are the other views which existed at the time that Dr. Bell began to do some work. What he did I shall have to refer to later on. It is quite plain that people are still striving to avoid operation, and for very merciful reasons. You know, as this case has told you, that it is sometimes weeks and months—that is what the witness said to me—in some cases before you can diagnose the lump in the inside of the body as being cancer, and very often it has no malignity, and therefore you have a long period when the patient may be getting worse, and he may have arrived at such a stage that when it does come to the doctor you cannot operate. Then, as is referred to by the witness, there is the dread and reluctance of people to be operated upon which leads people suffering, and particularly women, to delay being operated upon; they dread the knife and hope the thing will pass away. Therefore the desirability of some other remedy is admitted by these gentlemen, although they think there is no other remedy. Then we have it that there has been a department of the great Middlesex Hospital for Cancerous Research, and witnesses for the defence have been here and said (Dr. Barlow among them), "We are trying to do it, and we are treating cases therapeutically, and we are treating cases by diet, and we are treating cases by medicine at the present time to try and find out some cure." Therefore, that people ought to enter into these questions and try to bring their ability to bear upon it is quite clear. But really there is nothing more wanted than the evidence of the lecture given only a year ago by Sir Alfred Pearce Gould, a gentleman of whom I speak with the greatest respect, because I have known him for many years. I am bound to say this, his evidence in the box did not appear to me quite to correspond with the meaning which an ordinary individual would gather from what he said; but, of course, that may be because he was addressing people who knew more about the subject. Although Dr. Barlow did say that they were trying to treat cancer by these two means at the Middlesex Hospital, he rather takes the view that the article does not mean as much as the ordinary man in the street would have thought. I will read the passage which has been referred to as to cure. This is only last year: "This is not an exhaustive list of such cases that I have myself seen, and I am sure that my experience is not singular. In some of them the disease was not 'cured' in the sense of being wholly and permanently removed"—you will remember the importance of that, because it is admitted that the pain in many cases is intense, and that improving the pain for the time being might be of great value as rendering the last few months of the patient's life less painful, and himself not suffering as in other cases he would have. But Sir Alfred Pearce Gould is certainly speaking of more than that. "In some of them the disease was not 'cured' in the sense of being wholly and permanently removed, but in several there is strong reason for thinking that this word 'cure' may be justly used. In many of the cases treatment directed to this end has been carried out"—that means special treatment, as you will see in a moment—"in some there has been no special treatment." Therefore he is dealing with cases where there has been special treatment apart from operation, and in other cases where there has been no special treatment. "In my brief records of these cases to-day I have not mentioned the treatments employed, because my present purpose is not to vaunt a remedy but to state a fact." It is entirely for you, but it is suggested by Mr. Shearman, and you must consider it, that the ordinary reader of that article would at once have understood Sir Alfred Pearce Gould as saying: "There are treatments which have been successful, but I do not want to quote them because I do not want to vaunt a particular remedy." Then it goes on, "but to state a fact—that cancer even when advanced in degree and of long duration, may get better, and does sometimes get well. There is cure of cancer apart from operative removal. All therapeutic cures are obtainable only by the working of physiological forces, and the first hope of therapeutic success comes with the observation of the efficiency of unaided Nature to accomplish cures." It is entirely for you, but it is suggested by the plaintiff—I will not express my own opinion—that the ordinary reader of that article would have understood Sir Alfred Pearce Gould as saying: "There are treatments which have been successful, but I am not going to tell what they are, because I do not want to vaunt a particular remedy," but in italics it says: "There is cure of cancer apart from operative removal." Gentlemen, it is a strong fact in favour of the suggestion made by the plaintiff and his counsel, that this question of cure of cancer is a matter in which medical men may fairly examine and publish their results, that one of the most distinguished surgeons, who was called to say the only cure is by operation, published that last year. It is not conclusive, but it is entirely a matter for you.

Then there is the question which has been raised as to whether or not cancer is a disease which comes in by the blood. Nobody denies that cancer occurs in many cases in people who have got into an unhealthy condition. Whether or not the plaintiff's witnesses are right or not in saying the blood is always in a septic condition is not very material; but Dr. Barlow and others all said that people when they are suffering from cancer have got into a bad condition of health, and Dr. Barlow admitted—I think it was he, or at any rate it was one of the defendants' witnesses—that when you get an advanced stage of cancer the blood is in a very different condition from healthy blood, not that he was able to diagnose it thereby, but that in fact it was in a very different condition. Upon that point the plaintiff not unnaturally relies upon what Mr. Shearman elicited in cross-examination from one of the defendants' witnesses—namely, the opinion of Mr. Stephen Paget, which was expressed in March, 1909: "In dogs malignant tumours in advanced stages have in several consecutive stages been cured by bleeding the animals and transfusing into the veins the blood of dogs previously rendered immune to this tumour." If that applies to the human being it shows that you can get at the cancer by working through the blood. Neither you nor I have to form an opinion upon this subject, but it is the kind of question which has to be meditated upon by people who are writing in favour of the one view or the other. I will quote a witness who struck me as giving his evidence clearly, whether he is right or wrong. Dr. Cowen, to whom I shall have to refer in another connexion. Dr. Cowen said that in his opinion cancer was a local manifestation of a toxic condition of the blood produced by constant absorption of alkaloids formed from putrescin or decomposing compounds. "Cancer itself gives out a further toxin which kills the patient." That may be right or it may be wrong, but that is the view of a competent medical man. On the other hand, the witnesses for the defendants say that is not right; they do not agree with it at all. That shows you the sort of controversy which was going on in the medical profession at the time that these articles were written or these books published.

In view of that you have to consider the conduct of the plaintiff which has given rise to this action and these strictures upon him. Here I tell you (of course you may have special knowledge, and you may bring it to bear upon the case) that you must act upon the evidence in this case, and that is why I am obliged to bring your minds back for a moment to what the evidence is. This is not a scientific theatre, and it is not a case in which you by your verdict have to express an opinion in favour of Dr. Bell's treatment or against it, except in so far as it bears upon the question of whether or not he has been libelled in this article, or the article is fair comment upon what he has done. He is a medical man, 67 years old, who was for twenty-one years physician in the Hospital for Women at Glasgow. He had performed about eight operations for cancer each year up to 1894, and in 1894 he ceased operating. One really must deal fairly with people. The defendants do not suggest there was any wicked motive in doing that. He says (and this, of course, he could have been cross-examined about), "I came to the deliberate conclusion that operation was not successful." It may be he was not skilful enough, but he says, "In my operations the cancer returned." He says, "For ten years I declined to operate. I lost money by it, and

therefore any suggestion that I did it for gain is not well founded." During that time he was a medical man with certainly considerable qualifications for research. He told you he was with the great Lord Lister, then Professor Lister, and wrote a pamphlet upon his system, and that he studied the potato disease, which is only important in another connexion, and about which I shall have a word to say to you later on. Then in 1876 he contributed to this very JOURNAL a paper on diphtheria, and then a paper on the prevention of secondary fever in small-pox by preventing the formation of vesicles, which has now become the general practice, and he said he was the first to point it out. He says also he was the first, in about 1874, 1875, or 1876, who used microscopic examination of the blood to aid his general medical position. Gentlemen, that does not prevent him being a quack or being called a quack if what he does afterwards deserves that name. But it is quite a just observation of Mr. Shearman that it is not the case of a man making or selling a medicine or some specific which he says will cure people, but it is the case of a man who says, "I honestly came to that conclusion." Then he came to London, and with regard to his coming to London we must consider a little more about him. He says that he has been treating cancer and reading everything he could about cancer during the whole time, and that he has had considerable practice in cancer during ten years in London. He says: "I have had a fair amount of success, and, taking all my cases, I have had 10 per cent. of successes; but if you exclude the hopeless ones which were frequently sent to me—I have had cases in which the cancer is inoperative and given over by the doctor sent to me—I have had 30 per cent. successes."

Now comes what is to my mind an important matter for you to consider. Excepting as to the use of the drug atoxyl, and possibly formic acid, no objection is taken to his treatment. It may be said not to be curative, but no one has suggested, except with regard to atoxyl, about which I shall have a word to say, that his treatment is not such as a respectable responsible medical man might use. The whole controversy is: Is he justified in saying that he has been successful? Gentlemen, you have seen the man. Mr. Duke asks you, of course, not to believe him. I thought it of sufficient importance that he should be tested, and I said I thought his case-books ought to be shown, because they would to a certain extent enable a competent medical man to see whether or not he has been treating people in the way he suggested, which is one indication of whether the man's treatment is an honest treatment or not. If the books had shown nothing of the kind the observations by the defendants would have been stronger. I am bound to say that what was read out by Mr. Duke is matter in favour of the plaintiff which you must take into consideration. His books were submitted to one of the most hostile witnesses against him, Dr. Barlow. I am not sure that he was quite the sort of man I meant the books to go to, but that does not matter. I thought they would be given to some man who was himself practising in cancer. As it was they sent them to the head of the Research Laboratory at the Middlesex Hospital, a witness against this gentleman, and a witness about as unfavourable a critic as the man could have. He produces his case-books, which roughly ran over eighteen months, and he said in the last three years he had 70 cancer cases, but it turns out that there were 325 people, and of them 25 per cent. were treated with the treatment which Dr. Bell says he treats cancer patients with. They may not have been all cancer patients—I think it is highly probable they were not entirely cancerous patients—but all of them were patients with tumours. As you know, the malignant character of the tumour cannot be always diagnosed. I will not go through the parts of the body. You heard what I got from Dr. Barlow yesterday with regard to the parts of the body where it may occur. There are many internal parts where there is no means of seeing it, and one of the criticisms of Dr. Bell against operation is, whether it is right or wrong, that the surgeon operates at once without waiting to consider what it is.

Mr. Holman Gregory: I am loth to interrupt, but 325 was general practice, not cases with tumours.

The Lord Chief Justice: Certainly, I said so.

Mr. Holman Gregory: Your lordship said, "They may not have been cancer cases."

The Lord Chief Justice: No, I beg your pardon; I referred to 25 per cent., and I made it quite clear. I am always glad to be corrected, because you always do it most fairly, Mr. Holman Gregory. There were 325 cases with notes of cancer, but 25 per cent. of the cases were apparently cancerous. There were only 16 of them noted as having blood examination (this is Mr. Duke's own words), and there is not the slightest reason for disbelieving him. Dr. Bell said he had in every case a blood examination, and there is no ground for thinking he is not telling the truth about that. So that it stands in this way: that submitting his case-books to the other side it appears that out of 325 cases, 25 per cent., or 81, were patients to whom he had administered that treatment, and he says, whether you believe him or not, that in 10 per cent. of those cases they were successful, and if you exclude the bad cases he says he had 30 per cent. of success.

Gentlemen, I do not propose to go into the question of blood examination, and I will tell you why. It is a controversy between these people. Dr. Bell said, if I may use a popular expression, that he sticks to this: "I can from the condition of the blood see a tendency to cancer. I can detect it. I have been working at this for many years, doing many microscopic examinations and my own photography." He has a right to say it if he believes it, and the fact that other people come to say that they cannot find anything does not show it is not right, although it throws a doubt upon how far he is successful in diagnosing.

Then comes a curious incident which is introduced into this case; it is entirely for you to say what weight it has with you. The defendants last week, quite properly, laid a trap for him. They got photographs of blood taken. Every one agrees that a good deal may depend upon how soon it is taken, and how soon after it comes from the body, and how the blood has been treated; but we will assume it all to be fair. Mr. Barnard said: "I took the drops from my own body," and Dr. Bulloch said: "I gave one from a cancerous person, one from a non-cancerous person, one from a healthy person, and one from a cancerous woman." It is quite true that if the photographs had been correctly arranged, and have been properly, so to speak, numbered, than Dr. Bell's evidence does not agree with what was the condition which you would expect to see in the blood from the cases which were given. For instance, in one case he described as a cancerous blood blood which was said to have come from a healthy man, and so on. Gentlemen, it is entirely for you. It is said by Mr. Shearman that it would have been much more satisfactory if we had had the slides used by some person who was taking them in the course of his practice. It is an observation which must not be altogether disregarded, although, of course, Mr. Shearman makes no attack beyond saying it is quite satisfactory. They have not produced any slides actually used by persons who were treating patients for cancer. All they did was to get these slides up last Monday, and they were, of course, a very formidable test for the plaintiff to have. You will probably not consider them as conclusive if he was wrong, but of course it is entirely for you to say what weight you attach to that evidence as throwing doubt upon what he said, that he could from the blood slide see the kind of condition of the body which is likely to lead to cancer. Now, he is not corroborated as to his method of doing it by the next witness who was called. I will refer to him in a moment, but I am taking this point now. It is equally true that in the case of Dr. Knaggs, who also works by photography and produces his own slides, that he says he works by granulation, and he gives the instances, whereupon the defendants' critic in court says that Dr. Knaggs is entirely mistaken, and that what he is looking at is only light in the photographs. These are matters entirely for you. They may be right or they may be wrong, but I never like to spend time upon detail. You have had evidence on the one side and the other. You have seen Dr. Knaggs and you can judge of the man. He produced photographs, and said, "I do act by observing granulation; I do not rely upon conglomeration," which was the word Dr. Bell used. This incident as to whether or not the blood diagnosis is an accurate guide to treatment is one which you will only consider incidentally; it is not of very great importance.

I now come to what is much more important: is this corroborated or not? The common suggestion made when this sort of libel action is brought is that the man stands alone, that there is nobody who has ever seen his cases, that his books are not properly kept (that is not said in this case) and that it is unsatisfactory. Now just for a moment or two let us consider what is the evidence on plaintiff's side before we come to that of the defendants. The plaintiff called altogether seven people. You have seen Dr. Knaggs; he says he has been diagnosing blood for ten years, and "I am bound to say it is only in advanced cases you can diagnose cancer." Therefore he is not so confident about that particular point as Dr. Bell, but he says he confirms Dr. Bell in his view as to cancer being a blood disease. He says that he has watched four cases treated by Dr. Bell: the coachman with the malignant cancerous growth in the tongue, and three other cases of cancer of the breast, all died, but the suffering was greatly mitigated. You have seen him, and you can judge whether he is an honest man; of course the defendants say he is entirely mistaken. He said that this treatment mitigated the suffering in all those cases, and in the case of the coachman he said he was cured. I forget whether that particular coachman is alive now, but it does not matter for this purpose, because the question is: Did the treatment, so far as medical men can judge, cure in that case? The fact that he comes back is an incident, because it is not a total cure, but it depends to some extent upon this theory, which I do not want to go into again, whether it is a blood disease or not. We know it was supposed to be so in early days, but according to modern research, it is thought that it is not. He is cross-examined (and it is very easy to do it) as to whether the coachman's tongue might not have been the result of a syphilitic disease. One does not quite know where they got that information from, but, of course, you must consider whether it might have been a syphilitic disease. I do not know whether syphilis is supposed to cause cancer or not, because I was not told, but he is saying: "Syphilitic conditions do produce similar conditions of the tongue, but I formed the opinion that that was cancer."

Then came Dr. Pollock Simpson. He said he had seen Dr. Bell's treatment, and has had it under his notice since the beginning of 1911. He says that his diet is excellent, and he first refers to the hot air treatment. It is rather remarkable that none of the defendants' witnesses have ever experimented or expressed any opinion, except generally, upon the hot air treatment. I put it to Sir Alfred Pearce Gould, and he said he used hot fomentations. I have no knowledge about it, and it is entirely for you. The plaintiff brought his apparatus down, which consisted, as you know, of a means of heating air at a

considerable pressure to 500° F., and directing it on to the cancer, ulcer, or whatever the thing is, and he says it does dry it up and ultimately assists in the removal. That may be true or false, but it is a most remarkable thing, that although that evidence with regard to that specific method of treatment was proved three days ago, yet the defendants have not ventured to criticize it or say a word about it. All I say is (it is for you and not for me) that you must consider this as a whole. Dr. Bell says: "I have thought out and arranged that system whereby that current of cool air coming into the pipe is heated up by an electric heater, and I direct it on to the cancer." That may be right or wrong, but the defendants have not suggested that all Dr. Bell's remedies are not worthy of using—they have not directed their attention to his system on that part of the evidence at all. You may know enough to say that it is not important, but still all they have said is that Dr. Bell has only used old remedies. Dr. Bell says he was the first to use the thyroid gland, and nobody denies that it may have some effect, although nobody suggests that by itself it is a complete cure. It appears in the first three cures about 1895, which Dr. Bell explained to the Gynaecological Society in 1897, and said that he thought the thyroid gland would do it, but he said in a distinct and specific manner, when cross-examined by Mr. Duke, that he had gradually improved what he had done, and he further said in most distinct terms: "It is quite correct; I have no cure for cancer. I have always maintained that there is no specific cure." Therefore, what he was doing, with what success we will see presently, was to develop all those cures and the study of the matter.

Then Dr. Pollock Simpson speaks as to the hot air treatment, and he speaks to having had experience of half a dozen cases all improved, and in one case of inoperable cancer of the pharynx there was great relief from pain and an improved condition.

Then came Dr. Simpson, and he said: "In 1910 I became acquainted with Dr. Bell's treatment"—and this is important—"I have not at the present time formed a definite opinion upon it, but I have not formed any unfavourable opinion. The first case was cancer of the uterus. There had been three operations—the patient declined the fourth operation." For the first month he thought that there was an improvement, but then he did not think that the improvement was maintained. Then he said: "In the other case of cancer of the breast I tried Dr. Bell's treatment," and then he described what happened. "The patient gained in weight, the tumour altered in colour, but ultimately the disease was not cured in that specific case." No one suggests that the fact that the patient dies afterwards proves that he has not been properly treated, because even in operation itself, apart from Sir Felix Semon's very large average, in the throat only, many people have said that it does recur after operations in some cases, principally because they have not come early enough.

Then came Mr. Dutton, who said: "I have formed the opinion for ten years that operation for internal cancer is not desirable. I consider cancer is caused by the toxin in the blood. There was one case of cancer of the breast not operated upon but treated, and I saw the patient last November."

Then came Dr. Cowen. He is in the same house, and was a tenant of Dr. Bell's. But, fairly enough, Mr. Duke did not suggest that his evidence was not fair on that ground. You will remember what he said. He made a great impression upon me, but it is entirely for you. He was the man whom I have quoted more than once as giving the clearest opinion as to what cancer is caused by. It is said by the defendants that his evidence is wrong, but it is entirely for you to say what you think of Dr. Cowen's evidence. He said he had seen several cases, and his treatment is identical both as to diet and objective treatment. Then he said: "Every case of a swelling, except the small nodules, which remained after four months' treatment, had been diminished, but the particular person in that case died of heart failure. She had improved very markedly." Of course, no one suggests that a person may not die of heart failure, especially if they have got into the condition in which they may be when they have cancer. Then he gave the evidence which I have read to you. He is a very important witness upon one point upon which Mr. Duke has severely attacked the plaintiff's treatment, and that is the question of atoxyl. It is entirely for you, but I do not understand it at present, what the defendants mean in attacking him on the atoxyl point. One witness said it was used first in 1902, but the witness called yesterday said 1906; that was Sir Alfred Pearce Gould. Several of the defendants' witnesses have used it for cancer but have abandoned it, and they have abandoned it because they say it is proved to have dangerous results. Upon that you have the evidence of Dr. Cowen before you, who was not cross-examined to it, and he says: "I have administered thousands of injections, and I have never had any results of toxic poisoning or arsenic poisoning or anything deleterious." Of course an immense deal would depend upon the drug administered and upon the patient. Dr. Bell says he has never had a case of anything wrong happening to the patient, and Dr. Cowen says although he has made thousands of injections he has never had such a case. It is a very strange thing that according to the evidence of the defendants called yesterday a substitute is now being used called "salvarsan," and which is also known as "606," containing arsenic in it. All this is a contest between medical men. This morning formic acid was suggested, and the only evidence about formic acid is that it is seven times stronger than acetic acid, but it all depends on the amount that is administered. So far as I recollect (I will not be certain) there was no cross-examination as to how Dr. Bell administered the formic acid, or whether the strength was too much, or whether any harm came from the use of formic acid. The defendants come into court, quite rightly, to criticize what Dr. Bell has done. It may be that Dr. Bell in his experience is using a weaker solution. He said that atoxyl was only one-fortieth as poisonous as arsenic, and it appears that this new "606" is even less open to objection as it is reduced in its toxic properties. What I venture to put to you is this, that you cannot decide this case on that sort of controversy. If you believe the witnesses who have been called to support the plaintiff (I have not quite finished them) the plaintiff has been successfully treating cancer patients. I should think they are not all cancer patients, because probably, as the literature tells us, a great many cases are treated as cancer which, if they could be fully diagnosed, would turn out not to be cancer.

Then came Dr. Brown, the house-surgeon at Charing Cross Hospital and a general practitioner for thirty years. He said: "I have seen three or four of Dr. Bell's patients—the coachman with the cancer of the tongue. I have experience of cancer. It was undoubtedly cancer. Saw him twice. First time satisfied; the second time the cancerous lesion was actually healed. Another case of cancer of the breast in healing condition." That is the evidence of the house-surgeon at Charing Cross Hospital. Mr. Duke naturally was not able to criticize these witnesses, but it is entirely for you to say how far you are satisfied that the plaintiff has wholly, or in part, by old methods arranged in a new way and partly by new methods and by greater attention to diet as he said, been able to devise better schemes for the cure of cancer than have gone before.

Then Dr. Brockman said: "I first became aware of Dr. Bell's treatment in May, 1910; patient suffering from malignant tumour. I thought she should lose no time. There were radiating pains and a tumour about the size of a walnut. She is now perfectly well after two years; after eighteen months the tumour disappeared." It is all very well for men who believe in operating to come and say, "This is all quackery." It is for you to say whether you believe this evidence, and if you do believe the evidence then you will pass your judgement upon it from that point of view and form your opinion, notwithstanding the plaintiff may have attacked the operating system much too much, whether he has devised by old remedies a new and better method of cure. It is not the least to the point that people have thought of arsenic, or thought of formic acid, or thought of these things years before. Many of the modern treatments are nothing but a revival of the old treatment with better concomitants. That was the plaintiff's evidence. I must say I thought the observation made by Mr. Shearman was well founded with regard to Dr. Maughan. He was a particulary honest witness—I do not say the others were not—and this is how he struck me. Dr. Maughan was vouched by the plaintiff but called by the defendants. He said he had given up the use of atoxyl because he found it had uncertain and possibly dangerous results, but he gave evidence which, from the point of view of cancer, was most remarkable. He said of these three cases, two died from causes which he did not know, and one from heart failure, but the tumours had disappeared almost to nothing in a most remarkable way. The defendant called people of great experience, but he does not call Sir Felix Semon as a witness against the plaintiff's alleged system. What he did say was that in cases of cancer he had had successful operations in no less than 20 out of 25, and he gave evidence which everybody would believe. Sir Felix Semon and Sir Alfred Pearce Gould are practically the only practising men called by the defendants. Mr. Duke called Dr. Bashford, who is one of the defendants and the head of the Research Institute. He called Dr. Barlow, the Director of the Cancer Research Laboratory at the Middlesex Hospital, but he has no patients under him, although of course he can see them. Then Dr. Bulloch was called, and he is in the Bacteriological Laboratory at the London Hospital. Mr. Boycott was the lecturer at Guy's, and I do not think he was asked whether he practised or not, but I will assume he did.

Mr. Holman Gregory: He does not.

The Lord Chief Justice: That is very fair. Dr. Maughan is a practitioner and a police surgeon. Therefore, the defendants' witnesses consist of Sir Felix Simon, who is a very important witness on the question of successful operations in throat cancer; Sir Alfred Pearce Gould, whom I have already commented upon; Dr. Maughan, a police surgeon; and three or four experts in research. You very naturally said yesterday you had had enough of that type of evidence. They might have been able to call practitioners in cancer cases. I do not know what evidence they could have called, but that is the evidence they have given.

It is for you to say whether, after what the plaintiff has proved before you he has done, you consider that this article is fair comment. I caution you again not to decide against the defendants because they used strong language. The plaintiff himself has used strong language. Do not hesitate to decide against the plaintiff if you disbelieve the substantial part of the plaintiff's evidence, but if you believe he has told you a true story of what has been happening during the last eighteen years, and particularly what has been happening during the last eight years in London, and if you believe that the witnesses did see what they have said, you will have to ask yourselves the simple question, is it right to describe this man, a competent medical man, as a quack because of what he has done or preached? If you consider, after examining this evidence, that he has been exploiting the credulous and the timid to his own advantage, then, of course, he would be quack, although he is a

qualified medical man; but if you think he has told you the honest result of eighteen years' work after he had himself abandoned operation, and if you come to the conclusion that, as he says, he has not been making money by it at all, but rather the contrary, and he is a poorer man, of course you will be of opinion that there is no ground whatever for calling him a quack.

I am not going to read the article again, but I will only make three observations about it. It is not denied by Dr. Bashford, and he has been consistently fair about that, that he did mean to accuse Dr. Bell. He says, "I meant to make the charge that he was trading on the credulity of the public in order to make money. My charge is that he meant to frighten people so that they should come to him and pay him money." A more disgraceful charge against a medical man it is impossible to conceive. If it is justified then Dr. Bashford is to be commended for having the courage to make it. If you think that what has been written and published of Dr. Bell is fair comment, and that he did it for that purpose, do not hesitate to find for the defendants. With regard to Dr. Bashford's attitude, there are men and men. There are men who take such a view that they will say almost anything, but it was very sad indeed for Dr. Bashford to decline to say that he believed what Dr. Bell said, and to volunteer the statement: "I still believe he wrote the books for personal gain from fees that people would pay him, but it may have been from vanity or sheer ignorance." If the case justifies that language, of course Dr. Bashford is right; but whether it is or is not fair comment is entirely for you.

Of course, gentlemen, you must not forget that this action is not only brought against Dr. Bashford, but is brought against the paper, the BRITISH MEDICAL JOURNAL, and that they, as you remember, on page 1290, practically endorse everything Dr. Bashford had said: "Dr. Bashford's paper on cancer is the most damning exposure of the vilest and most cruel form of quackery that has appeared since Spencer Wells's 'Cancer and Cancer Cures.'" Gentlemen, I am not going to read the libel, as I said, except for two or three observations. One is, unless it be to intensify the effect of comment and criticism, one does not understand why these terrible stories of Sir Spencer Wells should have been introduced. You, of course, have seen the article with its photographs of quack notices, and with its pictures showing quacks; but, after all, from the point of view of what we are considering, perhaps the most important thing is the introduction of those stories, and the statement, twice repeated, in different words, "Were it not for the overwhelming evidence that Dr. Bell, formerly of Glasgow, is the modern representative in London of some of the practitioners referred to in Sir Spencer Wells's publications."

Gentlemen, if it be justified and is fair comment say so without hesitation. If it be not it is one of the most serious libel actions I have ever had to try. A competent medical man, practising in London, is held up to contempt, and said to be a medical man so ignorant that he is the modern representative of two such men as were capable of the gross and wicked conduct spoken to by Sir Spencer Wells in his stories.

Gentlemen, if you find this not to be a fair comment, and if you consider this article goes beyond fair comment and is a libel and a serious libel upon the plaintiff, you will have to assess the damages. That is entirely for you. I say no more to you than the two things which I am obliged to say in these cases. You have to consider the position of the plaintiff and the possible effect of such an article by the BRITISH MEDICAL JOURNAL upon him; and you have also to consider this, that up to the moment of your giving your verdict that article is justified as being fair comment. I have to say it. Not infrequently juries consider and are entitled to consider the case up to the moment the verdict is given. The defendant has not, of course, apologized. That would be quite inconsistent with his evidence. He had not said, now he has heard Dr. Bell's history, that he regrets any of the particular passages; but he comes to you to justify every word of that article. If you consider it is not fair comment, you will be good enough to say what damages you award to the plaintiff against the defendant and the proprietors of the paper, because both are responsible, and the paper itself has endorsed every word that Dr. Bashford has written. Gentlemen, will you be good enough to consider your verdict?

The jury retired from court.

On their return they found a verdict for the plaintiff, with £2,000 damages.

Applause in court was immediately suppressed.

Judgement was entered accordingly.

On the application of Mr. Holman Gregory, a stay of execution for ten days was granted on condition that the money was brought into court.

[Dr. T. Young Simpson (Plymouth) requests us to state that he is not the Dr. Simpson of Plymouth who gave evidence in the case.]

RECEIPTS AND EARNINGS DURING INTRODUCTION.

OCTAGON writes that he is buying a practice with a year's introduction, and it is agreed that during that year "the vendor and self are to equally divide the receipts." He wishes to know whether the vendor is entitled to share in bills sent out but not paid during that year.

*** It would seem that strictly speaking, according to the wording of the agreement, the vendor would not be entitled to a share in anything beyond money received during that year, and the buyer would also be entitled to share in money paid for work done before he purchased the practice if any old bills were paid. But this is very unusual. In the circumstances detailed, the vendor and buyer should share equally in the proceeds of all work done during the year of partnership, and the buyer has no claim to any part of the book debts paid during that year for work done before he bought the practice, unless he has purchased the same.

Medical News.

THE King, who is patron of the Seamen's Hospital Society, will visit the Branch Hospital, Royal Albert Dock, on July 17th, and will lay the foundation stone of the new wing of the London School of Tropical Medicine.

LORD ROSEBERY, Chancellor of the University of London, will distribute the prizes at the London Hospital Medical School on Monday, July 1st.

ON Friday, June 14th, H.R.H. Princess Louise formally opened at Merton, S.W., the new Nelson Hospital, which takes the place of the old Cottage Hospital in Merton Road, South Wimbledon.

THE annual garden party will be held in the grounds of Guy's Hospital on Thursday, July 11th. The wards, school buildings, and museum will be open for the inspection of visitors from 2.30 p.m. During the afternoon the prizes will be distributed by the Marquess of Salisbury.

DR. F. G. BUSHNELL, whose name was mentioned in our issue for June 15th as that of one of the three candidates for the appointment of County and School Medical Officer in the Isle of Wight who were interviewed by the County Council, desires us to state that his application for the appointment was only conditional, and that he was not prepared to accept the post on the terms advertized.

THE annual general meeting of the Research Defence Society will be held this day, Friday, June 21st, at 5 o'clock, at the Royal College of Physicians, Pall Mall, S.W. The President will give a short address and the annual report will be presented by Mr. Sydney Holland. Other speakers will be Sir William Ramsay and Professor Starling. The society has now more than 5,000 members and associates.

THE annual report of the Children's Country Holiday Fund shows that last year over 45,000 children were sent to the country for a fortnight's holiday under its auspices. They were selected by workers and visitors connected with sixty-three London and local committees, and were received at cottages chosen for the purpose by one or other of over a thousand voluntary workers in the country who undertake to make all the arrangements required. As the moral and physical benefit accruing from these holidays must no doubt be very great, the fund seems to deserve support. Donations may be sent to the Earl of Arran, the Honorary Treasurer of the fund, at 18, Buckingham Street, Strand.

PROFESSOR LANFRANCHI, Director of the Medical Clinic of the Higher School of Veterinary Surgery of Parma, lately contracted trypanosomiasis from a dog on which he was investigating the results of infection with the *Trypanosoma brucei*. The diagnosis was confirmed by Professors Bertarelli and Castellani and by the Pasteur Institute of Paris. This, says *Il Policlinico*, from which we take these particulars, is the first known case of transmission to man of the parasite which causes such ravages among cattle in South Africa. We are pleased to be able to add that Professor Lanfranchi is said to be on the way to recovery.

THE Insurance Commission in England has issued a notice stating that a preliminary meeting of every provisional insurance committee will shortly be held on a date to be fixed by the Commissioners, and that this meeting will be attended by one of the officers appointed by the Commissioners who will be ready to give advice and assistance. The meeting will elect a temporary chairman and will then proceed to elect representatives of the two sections of insured persons not yet represented on the committee—namely, those who belong to any county, local, or small friendly society not included in the sections of friendly societies already represented, and deposit contributors.

THE University of London, through the board appointed to promote the extension of university teaching, has authorized the holding of a summer school of town planning. The rapid progress of the town planning movement and the coming into force of the Town Planning Act have made it necessary for those engaged in the offices of architects, municipal engineers and surveyors, to possess a knowledge of the subject. This, however, is at present

difficult to acquire, since university and other courses on the subject are only available in one or two places, and in ordinary architectural and engineering textbooks the question is hardly discussed at all. The school will be held at the Hampstead Garden Suburb from August 3rd to August 17th. This place has been selected because in itself it represents an object lesson in careful town planning, and the 240 acres already laid out and occupied by about a thousand houses are about to have added to them 400 other acres, the laying out of which will be in active progress at the time the school is held. The various lectures arranged include two by Dr. G. F. McCleary, M.O.H. for Hampstead, on the public health aspect of the town planning movement, and one on the ethics of suburb planning by Mrs. S. A. Barnett. On the opening day the students will be received at the Institute Library of the Garden Suburb by Mrs. Barnett and Sir Henry Miers, Principal of London University, while later on in the evening a meeting will be held under the chairmanship of the Right Hon. Alfred Lyttelton, to hear an inaugural address from Lord Crewe.

THE fourteenth annual dinner of the West London Hospital and Post-Graduate College took place on June 11th, under the chairmanship of Dr. Arthur Saunders. The guest of the evening was Sir W. L. Gubbins, K.C.B., Director-General of the Army Medical Staff, who, in acknowledging the toast proposed in his honour and that of the other guests, mentioned, as a satisfactory example of the increased importance now attached to science, the fact that Sir David Bruce had been specially promoted to the rank of Surgeon-General as a recognition of his work in relation to sleeping sickness. Mr. Bidwell said that since both the Army Medical Department and the Royal Naval Medical Service now had their own arrangements for the post-graduate instruction the college would no longer be recruited from these services to the extent that had formerly been the case. On the other hand, it was becoming the practice for officers in the West African Medical Staff to put in their study leave at the college; so that if the college was losing in one way it was gaining in another. In any case, the entries for the current year were larger than last year. In regard to the hospital, both Dr. Saunders and Mr. C. F. Marshall expressed some anxiety. It was doing excellent work, but it was impossible to feel certain as to the circumstances in which it was to continue to do that work. The speeches were interspersed by music, and the evening ended with a toast to the Chairman, which was proposed by Dr. Shuter and duly acknowledged.

AT the annual meeting of the Society for the State Registration of Nurses on June 6th, it was mentioned that its membership now numbered 3,187, and that the number of States in America which had adopted registration of trained nurses had now risen to thirty-four. An address was delivered by Dr. W. A. Chapple, M.P., who said that he had been invited to speak because of his experience in New Zealand, and was aware of the beneficial result which had accrued in that country from the introduction of the Nurses' Registration Act. That Act was introduced not for the benefit of nurses, but as a safeguard for the public. It obliged every registered nurse to wear a badge, and the public soon learnt to expect its appearance on the uniform of any woman offering her services as a nurse. In this way a large proportion of persons possessed either of little knowledge of nursing or of no knowledge at all were gradually winnowed out. It seemed the duty of every Government to assume ignorance on the part of the average layman as to what constituted an efficient nurse, and to protect his interests in similar fashion. Among various resolutions passed at the meeting was one protesting against the exclusion of nurses from direct representation under the Insurance Act. There was a danger in the fact that the only members of the nursing profession nominated by the Commissioners to seats on the Advisory Committee were three officials of a charitable institute which recognized and inspected midwives acting as nurses through county nursing associations under lay control. This was a dangerous abuse which had crept in all over the country, and provided very cheap contract practice to the real poor. As a charity, it was argued that this was better than nothing; but under the Insurance Act the sick had a distinct right to receive their nursing from thoroughly trained persons. To ensure such nursing the privilege of representation on the Advisory Committees in England and Wales should be accorded to nurses not less than to certified midwives and to chemists. It was probably the fact that so far a legal status had been denied to the nursing profession which was responsible for this failure to accord nurses a rightful position in the administration of the National Insurance Act.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

H. A. L. desires to place a patient in a home or house in the country near London. He is blind, but otherwise in fair health, and can pay 30s. a week.

ALPHA asks what district is likely to be beneficial for residence for a case of so-called muscular rheumatism, or, as some would call it, gout, which is worse in cold damp, and also in hot weather, but better in ordinary medium cold weather.

INCOME TAX.

Depreciation of Motor Cars.

MOTORIST and others complain that the surveyor of taxes has refused to allow any sum for depreciation of a motor car used for professional purposes, although an allowance under this head has been made in the past.

*** Hitherto there has been a divergence of practice in different localities on this point, but it appears that common action is now being taken by surveyors of taxes in the direction of refusing such allowances. The ground of refusal is that the special Act granting the allowance of wear and tear of "machinery and plant" applies in terms only to a "trade, manufacture, or concern in the nature of trade." From an income tax point of view, the practice of medicine might well have been regarded as falling within this general description, but the Inland Revenue has ruled otherwise, and on a strict interpretation of the words it might be difficult to resist its reading. The allowance for depreciation is regarded as a yearly contribution towards the expense of renewing the car when the time comes for renewal, so that where the depreciation allowance is refused the practitioner should take care to see that in due course when he has to replace the car by a new one full credit is given in his accounts for the cost of renewal. If during the past three years the cost of renewal has been incurred, but not allowed by the surveyor of taxes, application should at once be made to him for an adjustment of the current year's assessment.

ANSWERS.

TREATMENT OF TRACHOMA BY CO_2 SNOW.

MR. C. DEVEREUX MARSHALL (London) writes to refer "T. W.," who asks for directions as to the treatment of trachoma by CO_2 snow, to a paper by Mr. Leonard J. C. Mitchell, formerly house-surgeon at Moorfields Ophthalmic Hospital, now of Melbourne, read in the Section of Ophthalmology of the annual meeting of the British Medical Association at Birmingham last year, and published in the BRITISH MEDICAL JOURNAL of November 4th, 1911, p. 1176.

LETTERS, NOTES, ETC.

A WARNING.

THE Greenwich police have issued the following "description of a man who is calling upon doctors in South East London, and informs them that they have been appointed President of the local branch of the Boy Scout's Ambulance Brigade, and then solicits a subscription to the funds of the brigade; if successful gives a printed receipt for same, signed W. T. Rogers, Captain and Instructor. Age 21, height 5 ft. 5 in., clean shaven; dress, brown suit; wears button badge of St. John Ambulance Association. A revolver was seen in his possession when calling on a doctor in this district." The police ask to be informed should the man call.

ERRATA.

IN the article by Sir John Byers on "The Evolution of Obstetric Medicine," published in the JOURNAL of June 15th on p. 1345, for "Orisabius" read "Oribasius"; on p. 1347 for "Groiningen" read "Groningen," and for "Madam de la Villière" read "Madame," and on p. 1350 for "anaethetics" read "anaesthetics."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *postes restante* letters addressed either in initials or numbers.